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DETROIT

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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NASH OPTIMISTIC ON 1930 OUTLOOK

Car Builder Says Business Is on Sound Footing

KENOSHA, Wis., Nov. 27.—Another outstanding American industrial leader today contributed further encouragement to the nation in the way of his expressed conviction that general business conditions were on a most sound footing.

C. W. Nash, president of the Nash Motors Company, in a personal letter to the Nash dealer organization which will reach approximately 12,000 Nash dealers and salesmen throughout the country, stated: "There is nothing wrong with general business conditions in our country at all."

Continuing, Mr. Nash said, "Now that some parts of the country are sobering up from the effects of their stock market intoxication, it might not be amiss to pause for a moment and take stock of ourselves and of general business conditions.

"Let me say that, in my judgment, there is nothing wrong with general business in our country at all. It is a fact that in many sections of our country they do not know, neither are they interested, in what has been going on in the stock market.

"I never have known a time when general business conditions were on a more sound footing than at the present time. The country has been blessed with a bountiful harvest; prices of farm products are at a very satisfactory point; stock has done exceptionally well and has brought a splendid price. Other commodities coming from the ground, such as copper, iron, etc., are at a very good price. What more could you expect? The history of the American people is that when they have money they spend it. Our monetary situation never was in better shape during my lifetime. There is no shortage of money; the banks are loaded with cash. The indications are that we are going to have cheaper money in 1930 than in 1929; and just the mo-

(Continued on Page 2)

SEES BRIGHT OUTLOOK

C. W. NASH

RESOLD AUTOMOBILES ARE SUBJECT TO GEORGIA TAX

Atlanta, Ga., Nov. 27.—Car dealers and manufacturers have been informed that resold automobiles are taxable in Georgia.

Tax Commissioner Norman, in answer to enquiries said:—

"Each trade is a sale and each sale is taxable. Frequently a second-hand automobile is traded in on a new machine, and subsequently may figure in several more trades. Each transaction must be treated as a separate sale under the law and taxed as such."

DU PONT SELLS RIGHTS TO DUCO IN GERMANY

New York, Nov. 27.—The E. I. Du Pont de Nemours & Co. will take a stock interest in the Oberkoks Chemical Company in Berlin as the result of an agreement between the two companies. The Du Pont company today confirmed a report that it has granted the Berlin concern patent rights for the manufacture of Duco lacquers at the factory of Oscar Mosebach in Riesa, Saxony, subsidiary of the Oberkoks company, in return for stock and cash payments.

Peerless Spends $500,000 In Plant Modernization

CLEVELAND, Nov. 27.—An expansion program calling for the expenditure of $500,000 in modernizing the company's plant has been put under way by the Peerless Motor Car Corporation, according to announcement today by J. A. Bohannon, president.

The most important item in the expansion program is the installation of equipment for straight line production and this new facility is expected to be in operation in December in time for work on the 1930 models.

The Peerless plant will be modernized throughout.

The company has changed its fiscal year to begin October 1, instead of January 1, and Mr. Bohannon reports that the company had on hand on October 1 cash and receivables amounting to $1,500,000 and total current assets of $3,147,696, as against trade liabilities and accrued items of $763,937.

The report of the corporation and subsidiaries for the nine months ended September 30, 1929, shows net loss of $2,164,127 after depreciation, inventory adjustments, interest, reserve for contingencies, etc., compared with a net loss of $937,205 in first nine months of 1928.

The consolidated income account for nine months ended September 30, 1929, follows: Net sales, $10,112,800; other income, $128,020; gross income, $10,240,820; costs, expenses, depreciation and inventory adjustments, $11,590,515; loss, $1,349,695; interest, $22,487; provision for contingencies, etc., $791,945; net loss, $2,164,127.

J. A. BOHANNON

MONTANA LISTS AUTHORIZED MOTOR CARRIERS IN STATE

Helena, Mont., Nov. 27.—There are 302 authorized motor carriers in Montana, according to figures compiled for the forthcoming annual report of the Railroad and Public Service Commission, and they cover 3,094 miles of regular routes.

U. S. RUBBER ANNOUNCES PLANS FOR EXPANSION

Detroit, Nov. 27.—Confidence in the industrial outlook was evidenced here today when the United States Rubber Company announced that under expansion plans already launched the output of the Detroit tire plant next year is to be substantially increased over that of this year. The announcement was authorized by L. D. Tompkins, general manager of the tire department.

Utilization of space now available and the installation of new machinery and manufacturing methods will make possible the increase in volume without greatly enlarging the floor area.

AUBURN DEALERS STOCK LESS THAN 2½ CARS EACH

Auburn, Ind., Nov. 27.—New Cord and Auburn cars in the hands of Auburn dealers and distributors average less than two and a half cars each, E. L. Cord, president of Auburn, announces. At the same time Cord announced that factory stock of Auburn and Cord cars on hand averages less than one car per dealer.

Used cars in the hands of the eighty-two Auburn distributors average ten cars each with an average investment in used cars of $5,111.40, while Auburn dealers' used car stock averages less than two cars each with an average investment in used cars of slightly over $1,000, the Auburn official said.

RUBBER FIGURES ARE ASSEMBLED

Third Quarter Consumption of Crude Is Put at 94,630 Tons

NEW YORK, Nov. 27.—The Rubber Manufacturers' Association has compiled the following estimates based on answers to its questionnaire covering operations in the rubber industry for the third quarter of 1929. All figures are estimated totals for the United States in the period under review.

The estimated amount of crude rubber consumed in the manufacture of tires and tire sundries (including bicycle and airplane tires) in the United States for the third quarter was 94,630 long tons.

The estimated amount of crude rubber consumed in the manufacture of all rubber products during the period was 113,746 long tons.

The estimated stocks of crude rubber on hand in the United States as of September 30 amounted to 86,852 long tons.

The estimated amount of crude rubber afloat for United States ports as of September 30 was 49,908 long tons.

The estimated total sales value of shipments of tires and tire sundries (including bicycle and airplane tires) manufactured during the third quarter was $222,933,000.

The estimated total sales value of shipments of all rubber products manufactured in the United States in the period totaled $326,292,000.

The total production of reclaimed rubber in the United States was estimated at 58,040 long tons and the total consumption of reclaimed rubber at 56,963 long tons.

ATTERBURY INCREASES WORKING SCHEDULES

Buffalo, Nov. 27.—In an effort to catch up with orders the Buffalo plant of the Atterbury Motor Car Company, truck manufacturer, has been put on a ten-hour schedule in major departments. Several production divisions also have night forces. The plant is operating six days a week and will continue on the increased production scale for at least another thirty days.

N. A. C. C. Will Plan Survey Of Car Sales Before Shows

Special from A. D. N. Detroit Bureau

DETROIT, Nov. 27.—Plans for the coming automobile shows in New York and Detroit, decision to secure statistics from the sales field to balance car production and sales and a discussion of new items to be shown for the first time at the national shows, featured the session here yesterday of the sales managers' committee of the National Automobile Chamber of Commerce and officers of the National Automobile Dealers' Association.

The meeting was held at the N. A. C. C. headquarters in the General Motors Building, with the dealers' officers present by invitation. Problems of both the manufacturer and the dealer were discussed frankly.

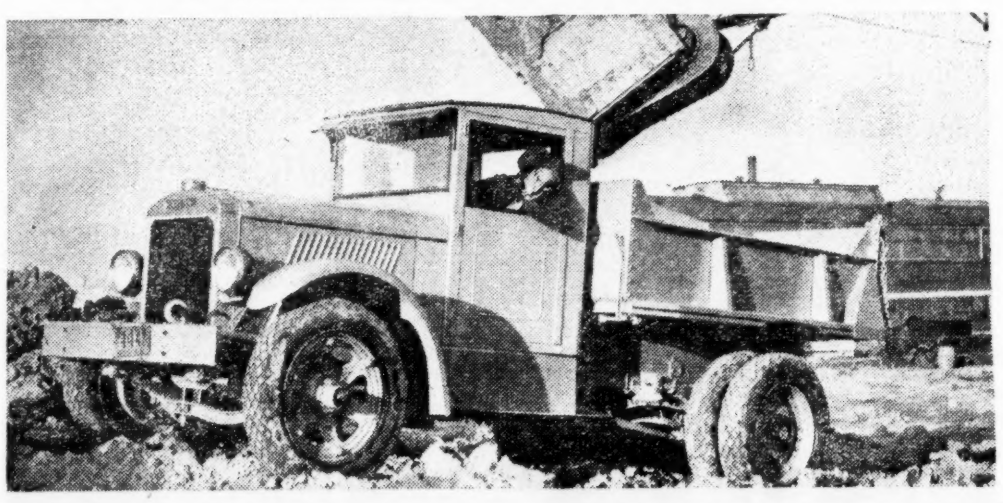
Plans for the 1930 national automobile shows were considered in detail, and the present problems of distribution and the outlook for next year were discussed. It was decided to procure additional statistics from the sales field, with a view of more balanced production schedules in the interests of both the manufacturers and the dealers.

It was indicated that many new

(Continued on Page 2)

Relay Announces New Heavy Duty Truck Model

New Relay Model 50-D Heavy Duty Truck



RELAY MOTORS CORPORATION, Lima, O., has just announced a new heavy duty truck with Relay suspension drive rear axle. This model is offered in capacities of two, two and one-half and three tons in wheel base of 139½, 161 and 185 inches

LIMA, O., Nov. 27.—The Relay Model 50D, rated two, two and a half, and three tons, is announced by Relay Motors Corporation. This is the first truck addition to the Relay line since the one-ton 20B and ton a half S11B were announced some time ago.

This model is being built in three wheelbase sizes 139½ inches, 161 inches, and 185 inches. On the 139½-inch chassis it is particularly adaptable to dump truck operation where short truning radius is a necesity.

The six-cylinder engine has a 3¾-inch bore, 5-inch stroke and 330 cubic inch piston displacement. Cylinders and pistons are of gray iron, cylinders cast en bloc and contain steel alloy to harden, giving greater resistance against wearing of cylinders and valve seats.

The 50D has a S. A. E. horsepower rating of 33.75. Push rods are mushroom type, hardened and ground to close fit. Lubrication is secured by a forced feed oiling system with connecting rod bearings fed through a drilled passage in the crankshaft from main bearings. Oil is also delivered under pressure to timing gear compartment.

The carburetor is a double venturi

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1929

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C. W. NASH SAYS 1930 WILL BE GOOD YEAR

(Continued from Page 1)

ment those who have been intoxicated with speculation are sufficiently sobered up, you will find that business will go along about in a normal way.

"I am willing to admit that in some sections of the country right now, on account of everybody being upset, the automobile business is suffering a little. In other parts of our territory sales are running ahead of last year at this time.

"My opinion is that every one who goes after business in an aggressive manner will be surprised at the amount of business to be secured.

"I also am impressed with the belief that next spring will see a very normal business, and those who still have confidence in the country in which we live, and will go to work and work hard and discontinue talking panics, will be the ones who will come out on the top of the heap."

AIRPLANES SPEEDING DELEGATES TO N. A. C. C. MEETING IN JANUARY

New York, Nov. 27.—With guests from abroad arriving daily at the offices of the National Automobile Chamber of Commerce here and airplanes speeding the most distant participants in order to be in New York for International Day, January 6, the motor industry is preparing to make this the most notable transport event of the year.

The meeting will be held at the offices of the Automobile Chamber, 366 Madison Ave., in conjunction with the National Automobile Show at the Grand Central Palace, January 4-11. George F. Bauer, secretary of the export department of the chamber, is crossing Africa by air to be here, bringing reports of industrial advances in South America and Africa, and V. V. Ossinsky, head of the Automobile and Road Association of Russia, is likewise speeding across that country in order to arrive in time.

John V. Lawrence, European representative of the chamber, will arrive on the eve of the event. J. V. Mager is visiting this country now as the representative of bus lines in Czecho-Slovakia. Amleto Lampignani, general manager of the Bianchi Automobile Company of Milan, Italy, has been attending the National Machine Tool Congress at Cleveland. Karlis Krievs, former minister of communications of the Latvian government, is here, and has been making a special survey of trends in motor transport. The Tatra Motor Works of Czecho-Slovakia have sent three engineers, Messrs. Mimra, Bittmann and Czyptschirsch, to study modern production methods and machinery in this country.

GETS FORD ORDER

New York, Nov. 27.—Worthington Pump and Machinery Corporation bookings in the current month to date have been at a rate to make November one of the best months the company ever has experienced. Some recent large orders received include one from Ford Motor Company, for auxiliary equipment for a power plant.

W. C. BRUMBLE OF G. M. EXPORT BACK FROM TRIP TO EUROPEAN PLANTS

New York, Nov. 27.—W. C. Brumble, assistant general manufacturing manager of General Motors export division, who has been on a trip to the European plants of General Motors, returned to New York today on the Homeric.

A. M. Kaminsky, sales representative of General Motors Export Company, will sail for Santiago tomorrow on the Essequibo, where he will take over his new duties as sales school instructor for the Chilean territory. He will be accompanied by Mrs. Kaminsky.

M. C. Hale, assistant to the general manager of General Motors export division, will sail for Europe November 30 on the Milwaukee for a visit to European regional headquarters.

D. C. Wilkerson, underhood specialist of General Motors export division, who has been attached to the staff of the regional director for South America for several months, arrived in New York today on the Eastern Prince.

F. D. Peabody, recently appointed sales manager for General Motors Argentina, will sail for Buenos Aires November 30 on the American Legion.

N. P. Niedzwiecki, field representative of General Motors Polsce, Warsaw, arrived in New York Monday on the Milwaukee to attend the sales department conference that will open December 2 in the home office of General Motors Export Division. He was accompanied by his wife.

F. Timm, chief inspector of General Motors International, Copenhagen, who has been in America to attend the bus and truck transportation school of General Motors Export Division, sailed for Europe today on the Mauretania.

J. S. Chelle, manager commercial car division General Motors, France, who has been in America to attend the bus and truck transportation school of General Motors Export Division, will sail for Paris November 30 on the Milwaukee.

Olof Lindstrom, manager commercial car division General Motors Nordiska, Stockholm, who has been in America to attend the bus and truck transportation school of General Motors Export Division, will sail for Europe November 30 on the Milwaukee.

D. S. French, production specialist of General Motors India, arrived in New York yesterday on the Muenchen for a vacation and visit to the home office.

TRUCK FLEET OWNERS ORGANIZE IN SPRINGFIELD

Springfield, Mass., Nov. 27.—Transports Associates is a newly organized society composed of more than sixty local owners of trucks used in hauling and transport work, and asociated with the Springfield Chamber of Commerce. T. M. Johnson, secretary of the retail merchants' bureau of the Chamber of Commerce, is secretary of the association. The society has adopted an official insignia which each truck will carry.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Federal Aid Increase And New Road Measures Await Congress Monday

Special from A. D. N. Washington Bureau

Washington, Nov. 27.—Representative McDowell, chairman of the House Roads Committee, will propose an increase in the Federal aid appropriation from $75,000,000 to $125,000,000 annually when Congress reconvenes next Monday.

He has been conferring with Federal and state highway officials and believes the states are anxious to enlarge their building programs.

The states in such cases are to match the Federal appropriations dollar for dollar in construction of the projects for which Federal aid is extended.

Legislation providing for the construction of improved motor highways across unreserved public lands connecting with the Federal-aid system will be proposed in measures to be introduced in Congress the same day by Senator Tasker L. Oddie of Nevada and Representative Don B. Colton of Utah.

Under the terms of these bills, states in which reservations are located would not be required to match the Federal funds as in the case of roads built under the Federal-aid system.

Members of Congress from eleven states in which a large proportion of the government-owned lands are located have determined upon a definite course of action and will conduct a concerted drive for passage of the Oddie and Colton measures.

While authority now exists for construction of roads across national forests, the American Motorists' Association, which has indorsed the project, intends to make a fight for increase in the appropriation for these roads up to $12,500,000, with a provision that roads forming important links in the Federal aid system be given preference in the building programs.

Thomas J. Keefe, general manager of the A. M. A., today declared that the Federal government should assume total financial responsibility for the construction of roads across the vast area of lands it owns in the West.

N. A. C. C. to Survey Car Sales Before Shows

(Continued from Page 1)

items will be shown for the first time at New York, when the National Automobile Show opens January 4, with selling organizations planning new advertising and sales activities both in New York and in this city.

Members of the N. A. C. C. sales managers' committee in attendance were: R. H. Grant, General Motors, chairman of the meeting; J. E. Field, Chrysler; Paul G. Hoffman, Studebaker; W. H. Peters, Packard; Courtney Johnson, Hudson. Others present were: Robert C. Graham, Graham-Paige; H. H. Rice, General Motors; Warren E. Griffith, president of the National Automobile Dealers' Association, and C. A. Vane, general manager of that organization.

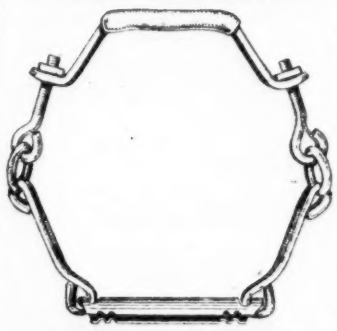
IOWA 10 MONTH USED CAR SALES TOTALED 33,966

Des Moines, Ia., Nov. 27. — Used car sales in Polk county, of which Des Moines is the county seat, totaled 33,966 for the period from January 1 to November 1 this year, according to Ben Hatcher, head of the Motor Car License Bureau of the county treasurer's office. October showed a total of 3,715.

Time and the weight of public opinion are required to establish a classic. The "Classic" in the field of Motor-Car Upholstery Fabrics is

CHASE Velmo VELVET

EASY-ON TIRE CHAINS



A BIG FALL AND WINTER SELLER JOBBERS AND DEALERS: Here is a profitable item, with only a few sizes, all ready sellers.

Orders for Fall Delivery Now Being Placed Send for Sample and Quotations

WOODWORTH'S SPECIALTIES CO
Binghamton, N. Y.

SPARKS from DETROIT

Detroit "In Its Infancy"

* * *

Joe Neebe, Playwright

* * *

Big Holiday Trade

Fred Kingsbury—Detroit Editor

AN article by B. C. Forbes, appearing in a recent issue of the Detroit Times, has been causing a great deal of interest in this city and much favorable comment from leaders in other cities in the United States. Mr. Forbes said the "city is only in the infancy of its greatness."

Continuing, he remarked: "Detroit, in half a generation, has become the wonder of the modern world.

"Yet it is only in its infancy.

"Brains makes cities and nations great. Detroit and tributary territory contains a larger number of $250,000-a-year executives than any city in the world, with the sole exception of New York.

"Your Fishers and Fords and Chryslers and Knudsens and Grants and Grahams and Macauleys and Motts and Websters and Ketterings are priceless assets, capable of upbuilding mightily any city fortunate enough to attract them.

"The day is rapidly coming, thanks mainly to the ingenuity of your motor engineering and production and sales geniuses, and to the waxing wealth of this virile young country, when our automobiles will equal one to every family in the land, when domestic refrigerators will outnumber today's automobiles, when radio and television will enrich many millions of homes—and in all this sure and certain growth Detroit will play a most important part. In aviation, too, Detroit can be counted upon to achieve leadership.

"Your past growth, amazing as it has been, will be dwarfed by your future growth——"

* * *

Joe Neebe, well-known member of the executive staff of the Campbell-Ewald Company, is fast becoming known as a playwright. From December 9 to 22, his four-act comedy, "The Thirteenth Ticket," will be produced at the Detroit Civic Theater. The play is an adaptation from the Russian of Alexei Tolstoy. A number of Mr. Neebe's one-act plays have been produced by Little Theaters in this country and abroad, and for talking pictures.

* * *

DETROIT is getting ready for a big holiday trade and all of the merchants of the city have just received the cheering news that the savings banks of the city will disburse approximately $6,000,000 within the next three weeks to Christmas savings fund depositors. This is a new peak for Christmas savings funds and is a promise of increased trade.

The banks show that a total of $5,905,311.90 will be disbursed to 122,101 depositors.

* * *

THE world's first international automobile tunnel which is being constructed under the Detroit River from Detroit to Windsor, Ont., is a marvel of engineering and ranks with the famous Holland Tunnel connecting New York city and Jersey City and the George A. Posey Tunnel, connecting Oakland and Alameda, Cal.

The Detroit Tunnel has a roadway of twenty-two feet and an estimated capacity of 1,000 vehicles an hour in either direction, being limited to this number by the formalities of customs regulations.

The tube is 5,135 feet from portal to portal and 5,485 feet from street grade to street grade. It is forty-five feet below the channel water level.

In this tunnel, new problems of air purification have been conquered. A fresh air duct extends under the floor section with the foul air duct between the ceiling slab and the roof of the tunnel throughout the greater length. At the outer sections of the tunnel, both fresh and vitiated air are carried in passageways above the roadway, the fresh air being led from its passageways down the sidewalls and released from the tunnel near the roadway level.

In the ventilating building at each end of the tunnel will be twelve giant fans, six of the blower type and six of the exhaust type. The fresh air is pumped into the tunnel and emitted alongside the roadway at about the level of the ordinary automobile exhaust. Suction fans operating through the upper duct draw the foul air in through openings in the ceiling slabs. Approximately one million cubic feet of air will be required a minute under maximum operating conditions and a complete change will be made in ninety seconds. The power layout is so arranged that any part of the equipment may be operated from either the American or Canadian side, obviating any likelihood of a power breakdown.

Production -- Engineering -- Factory

Naegel Favors Metal Throughout in Motor Coach Body Building

The following article is a digest of a paper presented recently by William C. Naegel, chief engineer of the Lang Body Company, Cleveland, O., at the transportation meeting of the Society of Automotive Engineers at Toronto, Canada.

ONE of the greatest advantages in the all-metal body is that continuity of construction can be maintained in the wheel housing and through the door construction with very little increase in weight. Maintaining this continuity of construction without increase in weight is brought about by the consistency of the material. It is a known fact that wood used where cross grain is encountered necessitates materially increasing the section and in most cases reinforcing the parts with steel.

Another important factor is the making of mechanical joints in the assembly of parts. Metal can be riveted, welded or bolted, and it is possible to calculate the actual strength of the finished connection. In the assembly of wood the chance for failure is greatly increased, due to the uncertain characteristics of the material, such as absorption of moisture, cross grain and variation of strength due to varying density.

Climatic conditions encountered in various parts of the country affect wood more readily than steel. As a matter of fact, changes in climatic conditions can be disregarded in the design of metal structure, but are a serious factor in wood construction.

Another advantage of metal construction is the possibility of reducing the weight of bodies. Our experience in building metal bodies has proved that it is possible to reduce weight by the use of metal construction

I wish to qualify this statement in this way. It is necessary to consider the specifications, the strength and the life of the body. It is obvious that if these items are not considered, weight ceases to be a factor. We have had three types of bodies in which the above factors were considered and following is the comparison in weight:

	Body Steel	Wood
29-pass. parlor	6260	6655
29-pass. parlor	6190	6520
(Treadle Door) 29-pass. city	5280	5580

Safety in collision and fire is greatly increased in use of metal construction. Damages caused by collision are not as severe, due to the fact that steel construction will bend and distort but will not splinter and break. To qualify this statement, a wood coach can be designated to withstand same shock as steel, but would be heavier.

There are several successful methods of design of all-metal bodies. The girder type using riveted side panels. This makes a very rigid type of construction. In this construction body sill is usually of angle or channel section, bolts are pressed, posts are of tee sections, roof rail of angle or channel and rafters are of tee sections.

Next is pressed steel chord girder type which is more flexible, using pressed steel side sill, roof rail, pressed channel shaped post and pressed channel rafter.

The latter type of construction, due to its flexibility, distributes the stress which is transferred by the chassis connections over a larger area and does not bring the sharp vibration into play. This also has the advantage of reducing the drumming in metal bodies.

In insulating bodies we must consider drumming, heat, cold and corrosion.

To eliminate drumming in panels, roof and flat sheets, it is our practice to use felt, cork or rubber strips. In hollow box sections we have found the use of small wood inserts very satisfactory.

Our method of insulating heat by use of the so-called "dead air space" has proved to be very satisfactory on walls of one inch in thickness or over. When thinner walls are used we believe that it is necessary to use some good insulating material.

To prevent corrosion we have found that the use of full-finish sheets and copper bearing steel along with a good metal preservative paint gives excellent results. It is our practice to dip all metal parts not exposed to the finish paint in an asphalt base preservative. All parts that are exposed to the finish paint are coated with a satisfactory metal primer before being assembled in the coach.

Wood parts are preserved by the use of white lead and oil or Saums wood preservative.

In designing interior finish, it is necessary to have all parts constructed so that they can be finished independently of the body and to arrange attachments for this finish in the metal structure of the body. This is very desirable from the standpoint of assembly, repairs and maintenance. Finish molding and panel can either be machine or metal screwed to the frame of the body. Where this is not practical, wood inserts or fillers should be provided.

The interior finish and final trim materials of the coach, including sash, seats, floor covering and various trim must be considered in the design of the coach, as this material constitutes approximately one-half of the total body weight.

CONCLUSION

The successful design of metal bodies is largely dependent upon the types of bodies the trade demands and the co-operation between the operator, chassis builder and body builder in working out the designs. It is an outstanding fact that all metal construction has been adopted in building ships, railroad cars, bridges, buildings and airplanes, and, therefore, its advantages which have been proven in these other industries should not be overlooked in bus body building.

White Sewing Machine Adopts Safety Layout For Lacquering Rooms

Cleveland, Nov. 27.—Unusual safety measures to insulate the White Sewing Machine Company's plant from fire originating in its lacquer department have just been installed. The same principles might well be adopted by automobile body plants and other concerns where lacquer is extensively used.

Four safety spraying booths have been built, suspended on the outside of the factory and resting on steel girders. They project from the sixth floor. Holes were knocked in the walls to provide entrances. Lacquer tanks also are placed on the outside.

Each booth is equipped with a sprinkler system that is set in operation by a rise in temperature. in case of fire, a curtain of water is released, blocking entrance to the factory, confining flames to the booths.

Spray gun operators stand at the entrance to the booths. Products to be sprayed stand on a revolving table enabling the operator to do his work without actually entering the booth. In event of fire he is protected by the water curtain.

Another feature is the complete elimination of lacquer fumes from the factory by air induction. S. E. Stevens, White works manager, supervised installation of the safety devices.

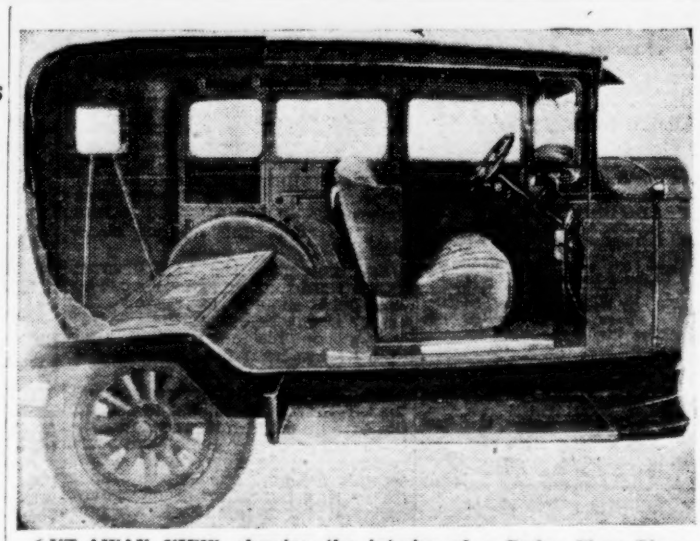
Precision Synchronizer For Ignition Adjusting

THE precision synchronizer is designed to fill the need of a scientific universal, precision instrument, quickly and accurately adjusting ignition points on all double breaker units of various types and manufacture, as used on the six and eight-cylinder cars of today. The

Ballou Precision Synchronizer

universal feature of this instrument making it necessary to purchase but the one instrument for all jobs is a feature. The accuracy of this instrument is as unquestionable as that of a micrometer, as the break can be adjusted to a thousandth of an inch, it is claimed.

The precision synchronizer has been approved by the Electric Auto-Lite Company, Toledo, O., it is stated. It is made of highly polished steel, is packed in a neat, handy box, complete with adaptors. Price $10. The precision synchronizer is manufactured by Walter T. Ballou, Los Angeles, Cal.



CUT-AWAY VIEW, showing the interior of a Dodge Mono-Piece body. The body is noted for its absence of riveted joints and the continuity of parts above the pillars and in the front and rear corners

Issue Bocklet on Axle Steel Fatigue Cracks

Chicago, Nov. 27.—The engineering experiment station of the University of Illinois in co-operation with the utilities research commission has just issued a bulletin on the subject of fatigue failures in car axles under repeated stress.

This bulletin records fatigue tests on car axle steel as received, and on specimens of car axle steel which, after a fatigue crack had developed, were turned down slightly below the root of the crack, and their fatigue strength then compared with that of the virgin steel. Axles of several different kinds of steel furnished specimens for these tests, and testing machines permitting the use of two different sizes of specimens were used.

The results of these series of tests indicate that the practice of salvaging an axle in which a fatigue crack has developed by turning it down to a smaller size is safe if the material is removed to the depth of at least one-sixteenth of an inch below the apparent bottom of the crack. If the material is removed only to the apparent bottom of the fatigue crack the evidence of these tests indicates that the damaged material is not all removed and that the fatigue strength of an axle so treated may be materially less than would be expected from the fatigue strength of the virgin steel.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRINGS RESULTS

Dodge Uses Improved Mono-Piece Bodies

GAINS in strength and rigidity have been recently made by the use of one-piece construction in the new bodies for the Dodge Six. These bodies have been entirely redesigned to take advantage of the advances made in stamping and welding practices.

The new bodies are known as the Dodge Mono-Piece type. Recent developments in die work have considerably reduced the number of component parts necessary in the complete body assembly, while new methods of welding make it possible to join the parts together so perfectly that there is no line of weakness at the joint. In fact, the joint is generally the strongest part of the piece.

Because of the greater capacity of the new press equipment for stamping out body panels, shrouds, cowls, tops, etc., there are many parts that are now made as one stamping which formerly were made of several separate pieces of metal.

In these new bodies the reduced number of stampings plus the adoption of new and improved welding machinery, have resulted in a true one-piece body structure.

SET DATES FOR ANNUAL SHOW AT TWIN CITIES

Minneapolis, Minn., Nov. 27.—The Minneapolis-St. Paul Automobile Show is scheduled for the week of February 1 to 8. It will be held again this year on the State Fair grounds at St. Paul.

G. M. EXECUTIVE TO SPEAK

Toledo, O., Nov. 27. — Floyd A. Allen, assistant to President Alfred P. Sloan, Jr., of the General Motors Corporation, will address the Toledo Ad Club at their dinner meeting December 6 in the Toledo Club, according to an announcement made by Willard M. Cannan, president of the advertising body. Allen's subject will be "Trends and Policies of Automobile Business."

Assets
Quick and Otherwise

Otherwise

Here sits John Brown—looking over his assets.

He thought he was in business—up till a few minutes ago.

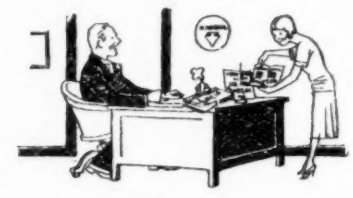
He had $25,000 capital in his business when he started. But as things went along he had to borrow $15,000 additional from the bank.

Now he has just looked at his bank book—with a balance of only $482.75—and pay day tomorrow.

His bookkeeper has just told him that the repossessed cars representing unpaid notes stand at $5,904.15, and that notes due amount to $15,237.60. His stenographer has just handed him a list of used cars amounting to $18,375.50.

That was the final rude awakening. All of his capital is tied up *tight*—and so is the money that the bank wants.

John Brown has made the mistake that so many dealers make—*he thought that a lot of cars on the street meant prosperity—and he thought that used cars and paper were assets!*



Quick

Here is Henry Smith—sitting pretty.

He has just decided to put up a new building—and buy his wife a fur coat for Christmas.

He put $25,000 into his business when he started—and that was all.

His stenographer is showing him his bank book with a balance of $10,167.50. His Liberty Bonds and other gilt edge securities amount with accrued interest to $8,350.16. His used car list looks pretty marketable—and totals only $6,482.34.

Smith hasn't put as many cars on the street as Brown has.

But each represents a profit.

Smith sells the Jordan. The service expense doesn't eat up all the profit—his discount enables him to live respectably—he has enough territory—the resale value is good, with a ready market—and he is out of the highly competitive price field.

Smith has assets—of the *quick* variety.

Write to the Sales Manager Jordan Motor Car Company for details of the Jordan proposition.

JORDAN MOTOR CAR COMPANY, Inc., CLEVELAND, OHIO

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

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AUTOMOTIVE DAILY NEWS PUBLISHING CORPORATION,
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ADVERTISING AND BUSINESS HEADQUARTERS
2716 Graybar Bldg., New York, N. Y. Telephone LEXington 6388
Harry A. Tarantous, Business Manager. J. Edward Schipper, Eastern Manager.
George M. Slocum, Manager Detroit Bureau, 427-8 Fisher Building, Detroit, Mich., phone Empire 3500; Willard R. Cotton, Western Manager, 333 North Michigan Ave., Chicago, Ill., phone Central 5936; Metz B. Hayes, New England Manager, Little Building, Boston, Mass.; Blanchard, Nichols & Coleman, American National Bank Building, San Francisco, Cal.; Lincoln Building, Los Angeles, Cal.; 1037 Henry Building, Seattle, Wash.; Philadelphia Office, 15th and Cherry Streets. **Address ALL advertising and business correspondence to 2716 Graybar Building, New York City.**

EDITORIAL DEPARTMENT
350 Hudson St., New York, N. Y. Telephone CANal 1000
Alexander Johnston, Editor. L. E. Levick, News Editor.
Detroit Bureau—Fred Kingsbury, Editor, 427-8 Fisher Building, Detroit, Mich., phone Empire 3500. Contributing Editor, John C. Wetmore.

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Looking Ahead

IN its current bulletin, the Guaranty Trust Company of New York has some extremely significant things to say regarding the present situation of business, viewed in the light of the recent Wall Street conflagration. "Viewed in the longer perspective," says the Guaranty statement, "the collapse of the inflated-price structure may correctly be regarded as a favorable development from the point of view of general business. This view is based partly on the prospect of an easier money situation, although this aspect of the matter has probably been over-emphasized. Just as business during the last two or three years has not been seriously hampered by the advance in interest rates, so a period of easier money will not by itself create a business revival. The influence of interest rates on most branches of business is negative rather than positive. When recovery occurs, however, the abundance of funds available at low rates will be a stimulating factor.

"The principal significance of the market break to general business lies in the fact that it has removed an unsound feature of the situation. A speculative boom invariably ends in the same way and as long as it continues its impending collapse represents an obstacle that business must surmount before safe and orderly progress can be resumed. Therefore, if the temporary effect of the stock market readjustment proves not to be severe—and there is abundant reason to hope that this will be the case—American business may congratulate itself on having survived the unusually abrupt termination of the greatest speculative movement in financial history without suffering to so great an extent as it frequently has under much less trying conditions."

We believe that there are two factors in the present situation which will make for a prompt recovery of legitimate business activity. The first of these is the Federal Reserve System, which has just had what we may fairly term its baptism of fire. When the stock market break finally disclosed its real scope, the burden suddenly placed on the New York banks was terrific. The withdrawal of funds from New York and the extraordinary demands for funds in the city created a situation that would once have been dangerous. The assurance that that New York Federal Reserve Bank was in a position to furnish funds freely to meet the crisis was all that prevented an old-fashioned panic.

The second factor that we believe will contribute to a rapid recovery of legitimate business activity is President Hoover's handling of the psychological situation. When the President called into conference the industrial leaders of the country and obtained their promise to check any tendency toward unemployment, he checked the natural human fear, which lies under any business depression.

All that business in this country today needs is continuance of buying. In any such crisis as we have been through, the fundamental trouble always has been the tendency of every one to close the pocketbook. The individual is scared for his job, fears that his income is about to be cut off and decides that he will put off buying anything until he sees what is going to happen. When this state of mind spreads throughout a nation, business depression is in full swing.

During the past few weeks students of business tell us this characteristic attitude began to be noticed. Retail buying fell off somewhat, while timorous souls hoarded their incomes until they could see how things were going to develop. Within the past few days they tell us that retail buying has improved again.

We venture the prediction that, after a dull period of a few weeks, American business will again swing forward into normal activity. As a matter of fact, the Christmas buying season may, in certain lines, bring the recovery before we expect it. But the year 1930 will undoubtedly see normal business activity, minus the unhealthy, feverish factor of market speculation that featured 1928.

Pacific Coast Dealer Tells How Ford Increases Sales

Editor Automotive Daily News:

Up to 1926 the automobile industry seemed to be going so smoothly that very little attention was paid to it except by those who were interested in dividends and stock values. Ford was making about one-third of all the automobiles used. No manufacturer criticized him or objected to his volume. It was taken for granted that it belonged to him by price right and no one could take it away from him.

You remember back in 1921 when things were tough, it was Ford who was bold enough to "throw the money changers out of the temple" and go on his own. Since that time he has been the leader in the automobile industry.

One day Ford dealers complained that if they were obliged to sell all the cars he could make every twenty-four hours they must have some colors to choose from. After a few seconds deliberation, Henry, who is the world's definition of efficiency, and realizing better than they how ridiculous the Model T would look in pastels, told them that they could have all the colors they wanted so long as they chose black.

This indication of thinking by his dealers, as displayed in their color scheme, started Henry to diagnosing this attack of colic and he decided that "T" had been served to the public long enough; that if he would build something that looked like an up-to-date automobile he would have 12,000,000 "T" replacements within the next three or four years, which, of course, was not to be sneezed at.

So Henry says to his 23,876 children of optimism—"We'll build a knockout; power, speed, looks, transmission, price, customers, 'n everything. Now go home, fire all your salesmen, improve your shop and service so they will support your establishment and give me ninety days and we'll make a lady out of Lizzie"—'n they did.

Henry went to the cement coffin, where, we have been told, plans, money 'n everything for a new model have been molding for the past twenty years.

After he got this twenty-year-old paper child on the road it looked and ran worse than the model "T," so Henry, Harvey Burroughs and Thomas went off on that trip. You remember, where the garage man thought Burroughs was going to pass himself off as Sandy Claus? When they got back there was a young Lincoln in Henry's brain.

It took longer than everybody expected a wizard like Henry needed to build this whiz-bang. However, this interval did two things, first, it taught Ford dealers how to sell used cars at a profit; how to make money in their business even if they never sold an automobile. Second, it opened the eyes of the other fifty-six varieties to the fat pickings while Ford was "Rip Van Winkling."

Profitable automobile manufacturers built new plants, bought more machinery, increased production, salaries and dividends.

Unprofitable automobile manufacturers perked up, saw a possibility that their eye-lash hold-on had not been for naught, and by adding four-wheel brakes and two colors could make up, from year's old inventory, enough cars to keep them on their feet long enough to complete a merger with other has-beens.

It gladdened the hearts of the other automobile dealers. They saw larger sales, more profits, a chance to sell used cars, in fact, to most of them the milennium had come.

This continued so long and so good that dealers began to believe what the factories had told them, viz, that Henry was down and out; that he never would be able to make anything but an imitation; that his money would not last long enough; that even if he did produce a car, he never could compete with the other cheap cars, which we now produce in such quantities; that his dealers were all broke; that his dealers could not build up a sales crew quickly enough to sell any great number of cars, that—that—that, etc.

It seems to me that some of these wise-cracks must have reached him, so when he was ready to go he decided to show 'm, so he just pushed the button, and the darn thing went. He increased his commission to dealers, he advertised his car. Well, you never saw any car get the $2,000,000 one-day newspaper send-off which the Model A got. In fact, this introduction was so magnificent and startling that we haven't forgotten it yet.

Since that time, Ford has been disproving all those things which people said he could not do.

When 1929 showed its head Ford was ready to go at his quantity speed production. Sales came to him out of the blue, for the price range of a four meant nothing to the women, who felt they could master and drive such a machine. All of which resulted in Ford again leading the famous 57.

The magnitude of his problem, his successful accomplishment in overcoming competition and other obstacles has won him sympathy, good will and orders, which no amount of advertising could equal.

The other fifty-six would not believe he could come back, and in spite of his monthly edging up and into their business, they would not admit it, though high pressure methods began to be used to force (not urge) their dealers to step on the sales accelerator.

Not long ago the wise guys near Wall Street who believed that "figures don't lie," but that "liars figure," began to smell battle, so they made paper profits, real ones. The end is not yet, unless Henry lays down.

Now then, who's to blame? Why Henry, of course. He should have gone out when he was down. He had his billion dollars, why didn't he give some one else a chance?

These other fifty-six wanted a billion dollars each also. In fact, they honestly believed they would be billionaires.

For two years we've tried our best to kill off Ford. He beat us at our own game. Let's be sports and take our licking; let's admit we're licked, at least. We can get along and make money if our factories don't force us to overstock new cars, thereby trading at a loss. Used cars worth $500 to $900 simply can't be sold at those prices, and you know it.

Ford has simply gotten back what he created, what rightfully belongs to him. We can't take it away from him. He holds this position only because of a public demand. We must recognize this and either give into it or secure it by taking the demand away from him.

The only way we can take business away from Ford is by giving a better car for less money. This is impossible, because of his enormous resources, money, brains and lead.

Ford's production prior to model change was 1,000,000 cars yearly, therefore, he is entitled to this production, plus a reasonable increase, as his 1929 share.

Ford plans are so well made, so thoroughly established, his dealers so rich, so optimistic, so well established, that nothing but his own folly will ever set him back. What will happen to auto sales when Ford starts his leasing plan, which is practical, safe, sound and which he can start when he wishes? If Ford lives another twenty years and keeps up his present gait, "God help the other auto manufacturers."

Now—here's the ultimatum.

Henry's to blame, but he won't quit. He is entitled to his share. He is going to get it, therefore, here's where the tail wags the dog. The other fifty-six must back up, go back to the production left, between a normal demand and what Ford wants to manufacture.

Ford is to blame—but—it's up to other manufacturers to save their own skins now.

Henry's to blame — but we're licked. Let's admit it and plan accordingly.

A VICTIM ON THE PACIFIC COAST.

COMING EVENTS

NOVEMBER

—Barcelona, Spain. Automobile Exhibit.

DECEMBER

1- 2—Tacoma, Wash. Motor Coach Association convention.
1- 7—New York. Automobile Salon at Hotel Commodore.
2- 6—New York. American Society of Mechanical Engineers' Convention.
3- 5—Chicago, Ill. American Petroleum Institute, tenth annual meeting at Hotel Stevens
4- 6—Omaha, Neb. Independent Oil Men's Association Convention at Parbon Hotel.
7-18—Brussels, Belgium. Automobile show.

JANUARY

1-18—Milwaukee, Wis. Automobile show.
4-11—New York. National Automobile Show.
6-11—East Orange, N. J. Orange and Maplewood Automobile Show.
8-11—Flint, Mich. Automobile show.
9- —New York. Society of Automotive Engineers' Annual Dinner.
11-18—Atlantic City, N. J. American Road-builders' Association Convention.
11-18—Philadelphia, Pa. Automobile show.
11-18—Buffalo, N. Y. Automobile Dealers' Association Show, 174th Regiment Armory.
11-18—Newark, N. J. Automobile Trade Association Annual Show.
11-18—Milwaukee, Wis. Automobile Show.
12-18—Cincinnati, O. Automobile show.
18-25—Baltimore, Md. Automobile show.
18-25—Brooklyn, N. Y. Motor Vehicle Dealers' Association Automobile Show.
18-25—Harrisburg, Pa. Annual Automobile Show of the Harrisburg Automotive Trade Association.
18-25—Hartford, Conn. Automobile show.
18-25—Pittsburgh, Pa. Automobile show at Motor Square Garden.
18-25—Montreal, Canada. Automobile Trade Association National Eastern Canadian Motor Show.
18-25—Louisville, Ky. Automobile Show.
18-26—Boston, Mass. Annual Automobile Show.
18-26—Los Angeles, Cal. Seventeenth Annual Automobile Show.
20-25—Rochester, N. Y. Automobile Show.
21-24—Detroit, Mich. Society of Automotive Engineers' Annual Meeting.
25-Feb. 1—Chicago. National Automobile Show.
25-Feb. 1—Cleveland, O. Show at Public Auditorium, auspices of Cleveland Automobile Manufacturers and Dealers' Association.
27-28—Chicago. National Automobile Dealers' Association Convention.
27-Feb. 1—Wilkes-Barre, Pa. Automobile Show.
29-31—Cleveland, O. Ohio Association of Commercial Haulers' Convention.
29-Feb. 1—New Haven, Conn. Automobile Show.

FEBRUARY

1- 8—Minneapolis-St. Paul. Automobile show.
3- 8—Cumberland, Md. Automobile Show.
3- 8—Wichita, Kan. Automobile Show.
3- 8—Ottawa, Canada. Motor show.
3- 8—Toledo, O. Automobile Show.
8-15—Columbus, O. Automobile show.
8-15—Los Angeles, Cal. Automobile Salon.
8-15—Kansas City, Mo. Automobile Show
8-15—Allentown, Pa. Lehigh Auto Trade Association Automobile Show.
10-15—Indianapolis. Automobile show.
10-15—Denver, Col. Automobile Show.
15-22—Providence, R. I. Automobile Show
24-March 1—Des Moines, Ia. Automobile Show.
25-March 2—Seattle, Wash. Automobile show.

MARCH

3- 7—Boston, Mass. Automobile Salon of fine cars.

FORUM

The Automotive Daily News is glad to receive letters from its readers on topics pertaining to the trade and to publish such as seem to have general interest. Obviously the Automotive Daily News must disclaim responsibility for views expressed by its readers.

FRANCE WILL REQUIRE APPROVED HEADLIGHTS, EFFECTIVE MAY 1, 1930

Washington, Nov. 27.—All automobiles, including trucks, registered in France after May 1, 1930, must be equipped with lights bearing the stamp of approval of the French Ministry of Public Works, Automotive Trade Commissioner W. L. Finger at Paris, today advised the Department of Commerce.

These vehicles must have either two sets of lights—one, Class A, lighting the road for at least 100 meters; the other, Class B, to be used when Class A lights are extinguished, and lighting the road for at least twenty-five meters without producing a glare; or there must be one combination set of lights, Class AB, which will satisfy either of these two requirements by operation of a switch.

Automobile manufacturers should submit to the French Ministry of Public Works one or more models of each type of light used on their cars. These models will be examined by a special commission of the Ministry of Public Works and, if approved, a certificate of approval will be issued.

The manufacturer of the lights, having received the certificate of approval, may then place the required official stamp on each light intended for use on a car to be sold in France. This stamping may be done in a factory in a foreign country.

GRAHAM-PAIGE WINS THIRD FOREIGN TOUR

Detroit, Nov. 27. — Graham-Paige, winner of the Automobile Club of Paris challenge trophy in the recent Tour de France, and victor in this year's international Monte Carlo tour over a route of 1,840 miles, has won another competition of major importance, the Deauville-La Baule rally. In competition with the leading makes of foreign cars, Graham-Paige entries finished in first, third, fourth and seventh positions, having put up a remarkable exhibition of consistent running through the run.

NORTH CAROLINA SALES TOP ALL PAST RECORDS

Raleigh, N. C., Nov. 27.—The sale of automobile license plates in North Carolina during 1929 passed the 500,000 mark on November 23, marking the first time in the history of the state that license plate sales have bettered a half million, according to Sprague Silver, head of the motor vehicle division of the Department of Revenue.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

TIRE GUARANTEE SELLS USED CARS

Separate Sales Force, Bonuses and Certified Cars Are Factors

By E. V. BILLSTONE

JAMESTOWN, N. Y., Nov. 27.—Segregating its used car department and salesmen from its new car quarters, the Third and Lafayette Streets Garage, local Hudson-Essex distributor, moves used cars rapidly by giving a bonus to salesmen on sales of slow cars, by guaranteeing tires for a certain number of miles and by offering an unlimited "money back if not satisfied" proposition.

Jack Cassell, manager of sales for the company, figures he handles 150 used cars to 100 new vehicles, for usually a used car is taken in trade on a new machine, and often when that used car is disposed of, another used car is taken in trade on it. It requires good management, and salesmanship of the highest degree, to keep these cars moving, and how the firm has contrived to do it makes a story of interest to other dealers.

Having cut down overhead expenses by converting a large storage space in the rear of its modern salesroom into a neat used car showroom, the management's first move was to pick out from its sales staff several who were adept at disposing of used cars. This done, they were assigned solely to the used car department. A large electric neon sign guides the way to the used car department.

"This method gets results," Mr. Cassell said. "If a used car stays over a certain number of days a bonus to the salesman who sells it is put on it. Four men do nothing but sell used cars and it takes excellent salesmanship to keep the floor clear. Sales meetings are an aid and we rely considerably on sales psychology talks as a stimulus to the salesmen."

Every used car taken in trade goes through the company's service department and is completely overhauled or brought up to the minute. This action is necessitated through the company's unlimited offer to return the full purchase price within thirty days to any dissatisfied customer, no strings attached.

Through an arrangement with a local tire concern, guarantees are given on the tires of all used cars. These guarantees are specified on each tire with a tag, bearing the imprint of the tire firm. This relieves the Third and Lafayette Garage of all responsibility concerning the tires. If a tire is defective, or does not withstand the guarantee, the purchaser, after buying the car, deals directly with the tire company. This plan has proved mutually beneficial as the tire company gets a prospective customer for a new tire and the garage is relieved of the responsibility.

All salesmen are neatly attired and courteous. Salesmen are told not to urge a customer to buy a car, or plead with them unduly, but simply to demonstrate the machine, hand the customer the key and tell him to drive it about for a few hours by himself.

This dealer has found that keeping the salesmen contented is half the show. With an objective to work for, the salesman will obviously go out and sell automobiles. With the weekly sales staff meetings, segregating of the two departments, guarantee on tires, etc., this concern has but little trouble in moving its stocks of used cars.

Personal Briefs

Newark, N. J., Nov. 27.—John W. Griggs, president of the Griggs Whippet Knight Company, local distributor of Willys Knight and Whippet automobiles, and A. W. Pickett, eastern zone manager of the Willys-Overland Company, have returned from Detroit where they attended a convention of distributors.

Albany, N. Y., Nov. 27.—Announcement has just been made of the appointment of A. M. Clark as assistant manager of the Boston branch of the Olds Motor Works, manufacturers of Oldsmobile and Viking cars. For many years he was active in this territory as district representative for the Olds Motor Works and covered this territory taking in several counties.

Watertown, N. Y., Nov. 27.—Charles A. Plumpton, Inc., 303 State St., has been appointed Plymouth dealer in this city.

DEALER DOINGS

Jacksonville, Fla., Nov. 27.—E. R. Stanley has acquired the interests of R. S. Crenshaw, his partner in the Crenshaw-Stanley Motor Company, Chrysler dealership, it has been announced here. Mr. Stanley assumes the entire control of the business, which will be known in the future as Stanley Motors, Inc.

Jamestown, N. Y., Nov. 27.—About sixty employees and friends of the Peterson-Ganey Motor Company, Inc., Dodge and Graham Brothers distributor in southwestern New York and a portion of northwestern Pennsylvania, were entertained at a banquet given by E. R. Ganey at the Sportsmen's Club, near here, last week.

Trenton, N. J., Nov. 27.—The Willey Motors, Inc., with showrooms and service station at South Broad and Center Streets, has been appointed Ford dealer in Trenton and vicinity.

Jacksonville, Fla., Nov. 27.—The E. C. Williamson Motor Company, Dodge distributor, has moved the used car and resale department from Main and 11th Streets to the building at Main and Ashley Streets. The building, which provides a better place to display the used cars, adjoins the new car and service quarters of the company.

Los Angeles, Nov. 27.—Bozzain Motor Car Company, 637 North Broadway, Los Angeles, Cal., has been appointed Studebaker dealer for this city.

Chehalis, Wash., Nov. 27.—Gordon Hamilton, who recently opened a De Soto distributorship in the Bevington Building here, will be distributor for this line in Pacific and Thurston counties, as well as Lewis county. Hamilton's headquarters will be at his garage here. He expects to name sub-dealers soon for Pacific and Thurston counties.

Winthrop, N. Y., Nov. 27.—Henry P. Ellis, of the firm of Ellis Brothers, local Ford dealer, has sold his interest in the firm to his brother, Henry C. Ellis, who will continue the business under the name of Ellis Brothers as heretofore.

Newark, N. J., Nov. 27.—Ray Nash, manager of the Newark branch of the Reo Motor Car Company, has received word that the local Reo sales force has been awarded first prize in the essay on business activities, which are at their peak in the early morning hours, and in which the use of motor trucks is a factor. The Reo factory conducted the contest as a country-wide competition, and the local men after a trip to the farmers' market here and to bakeries, etc., collaborated in their "write-up."

A GREAT STEP AHEAD FOR THE TRUCK AND BUS INDUSTRY

SAVES TIME
SAVES WEAR
SAVES EFFORT
SAVES MEN

VAC GEAR SHIFT

(The Biggest Advance Since the Self Starter) A Boon to Manufacturers, Operators and Drivers.

PUTS THE TRUCK AND BUS OUT AHEAD OF TRAFFIC

No longer need trucks be racked by the crashing strain of hand shifted gears. No longer need truck and bus transmissions suffer constant damage through grinding of gears.

After seven years of experiment and test, the perfected "Vac" vacuum gear shift does away with manual shifting. Not even the old hand shift lever is required.

The driver shifts with his hands at the wheel and his eyes on the road and traffic. A dial just below the wheel, with finger tip control of a small selection lever, replaces the hand shift lever of former days.

By the application of vacuum force through the simplest mechanism imaginable, gears are swiftly and silently shifted without effort by the driver.

What is the result? Wear and tear on both truck and driver are saved; repairs are smaller. The shifting strains that wrench the truck from engine to axle are eliminated.

Shifting by vacuum is positive. No gear shift can take place accidentally, no matter what position the index lever takes.

10 REASONS

WHY EVERY TRUCK AND BUS SHOULD BE EQUIPPED WITH THE "VAC" GEAR SHIFT

1. The cumbersome shifting lever is eliminated.
2. Finger tip steering wheel control. Less mental and physical effort. Shifts with hands on wheel and eyes on traffic or road.
3. Allows pre-selection of gear. Keeps the truck or bus ahead in traffic.
4. Requires no lubrication or servicing.
5. Uses no electricity; utilizes engine vacuum.
6. Adds minimum additional parts.
7. Is inexpensive.
8. Speeds up shifting in traffic and on hills.
9. Is smooth and silent; holds gears tightly meshed.
10. Is simple in operation and construction.

PRE-SELECTION OF GEAR SPEEDS UP TRAFFIC

Probably the most important feature of vacuum shifting is the ability to pre-select the gear in traffic and on hills. The selector can be set for second gear while in high, or for second when in first, or third when in second. At the desired moment, the clutch is depressed and re-engaged as in ordinary shifting, and in much less time the shift is accomplished.

The makers of "Vac" vacuum gear shift seek only to prove to builders and operators of trucks and busses that this revolutionary gear shifting mechanism will do all that they state. This they desire to do first by demonstration of existing models and then by furnishing sample mechanism especially adapted to the maker's truck or bus.

Every part of the "Vac" gear shift is guaranteed for the life of the vehicle. The mechanism does not require a new transmission, is simple and durable in construction and requires no servicing.

For particulars address:
GENERAL SALES DEPARTMENT
Universal Gear Shift Corporation
Suite 2325 · 250 West 57th Street
NEW YORK, N. Y.

UNIVERSAL GEAR SHIFT CORPORATION
Suite 2325—250 West 57th Street
New York City, N. Y.
Please send further particulars and booklet to
Name.....
.....
Street.....
City.....State.....

October Truck Registrations in N.J. Increase 38.3%

CHEVROLET SALES SHOW 18.7% GAIN

Heavier Makes Also Continue Strong: Ford High

TRENTON, N. J., Nov. 26.—Truck registrations for New Jersey in October increased 38.3 per cent., while in the ten month's period the increase was 35.3 per cent. over the respective periods in 1928.

One of the features of the October registration figures was the increased Chevrolet commercial car sales with an increase of 18.7 per cent. over October last year. The Chevrolet total for the ten months, however, is 205 units behind its record at this stage last year, a loss of 4.5 per cent.

Ford continued to pile up record sales with the Model A with a gain of 421 units in October and 4,909 for the first ten months. Ford's total sales so far this year is 323.2 per cent. greater than at the end of October, 1928.

Another feature of the New Jersey truck sales is the gains made by the heavier models. Light and heavy truck sales are not confined to any particular section in the state, running about even, according to population, in all of the twenty-one counties.

Increased sales in October are shown by Day Elder, Diamond T, G. M. C., Godfredson, International, Mack, Sterling and White, while in the ten months the gains were made by Autocar, Brockway-Indiana, Larrabee, Maccar, Rehberger, Republic, Sterling and White.

In the first ten months of this year New Jersey's total truck sales, as shown by registration, were 16,282, as compared with 13,842 for the entire year of 1928 and 14,844 for the entire 1927, the previous record truck year in the state. For October the registrations were nearly 500 greater than in the same month of 1928 and with continued increases in all businesses in the state requiring trucks it is expected that November and December registrations will continue to show the same ratio of increase.

Registrations for October as compared with the same month last year and showing percentage gain or loss follow:

	1929	1928	Pct. gain or loss
Acme	1	1	..
Amer. La France	1	5	*80
Autocar	12	32	*62.5
Brockway-Indiana	19	23	*17.4
Chevrolet	501	422	18.7
Commerce	1	1	..
Day Elder	9	8	12.5
Diamond T	8	7	14.3
Dodge	144	..	..
Fargo	13	..	..
Federal	16	31	*48.4
Ford	723	302	139.4
GMC	63	53	18.8
Godfredson	7	3	133.3
Hahn	2	..	..
International	33	30	10
Maccar	3	6	*50
Mack	50	46	8.7
Nash	1	..	..
Pontiac	1	3	*66.6
Relay	2	..	..
Reo	59	80	*26.2
Republic	1	1	..
Rugby	1	..	..
Schacht	3	3	..
Selden	1	4	*75
Sterling	16	7	128.6
Stewart	6	7	*14.3
Studebaker	7	..	..
Whippet	16	..	..
White	37	36	2.8
Willys-Knight	5	..	..
Miscellaneous	17	174	..
Totals	1,779	1,285	38.3

*Loss.

10 Months' Truck Sales in N. J.

THE ten months' truck registration for New Jersey, compared with the same period of 1928, showing unit gain or loss and percentage gain or loss, follows:

	1929	1928	Unit gain or loss	Pct. gain or loss
Acme	11	29	*18	*62.1
American-La France	38	50	*12	*24
Autocar	207	180	27	15
Backus	3	5	* 2	*40
Brockway-Indiana	230	214	16	7.5
Chevrolet	4,372	4,577	*205	* 4.5
Clinton	9	23	*14	*60.9
Day Elder	97	117	*20	*17.4
Diamond T	90	61	29	47.5
Dodge	1,002	—	—	—
Fargo	147	—	—	—
Federal	149	193	*44	*22.9
Ford	6,428	1,519	4,909	323.2
Garford	14	22	* 8	*36.3
G. M. C.	526	653	*127	*19.5
Godfredson	20	28	* 8	*28.6
Hahn	12	13	* 1	* 7.7
International	414	445	*31	* 6.9
Larrabee	11	3	8	266.6
Maccar	87	62	25	40.3
Mack	571	575	* 4	* 7
Nash	29	—	—	—
Pierce-Arrow	65	72	* 7	* 9.7
Pontiac	32	77	*45	*58.5
Rehberger	23	11	12	109.1
Relay	20	—	—	—
Reo	543	881	*338	*38.3
Republic	12	10	2	20
Rugby	35	—	—	—
Schacht	19	27	* 8	*29.6
Selden	18	24	* 6	*25
Sterling	103	86	17	19.7
Stewart	64	83	*19	*22.9
Studebaker	100	—	—	—
Whippet	145	—	—	—
White	319	285	34	11.9
Willys-Knight	43	—	—	—
Miscellaneous	274	1,711	—	—
Totals	16,282	12,036	4,246	35.3

*Loss.

Indiana Truck Group Urges Larger Gas Tax And License Fee Cut

Indianapolis, Ind., Nov. 27.—Larger gasoline tax and elimination of motor truck taxation through the automobile license fee method were favored at the annual convention of the Motor Truck Association of Indiana here.

Tom Snyder of Indianapolis, secretary of the association, said the gasoline tax is fair and equitable, since trucks consume the fuel in greater quantities than other vehicles. General adoption of the tax, he said, would eliminate the claim of other states that interstate transportation damages their highways without remuneration, for the trucks must buy gasoline as they go, and whenever they buy they will be paying the tax of the state in which the purchase is made.

John J. Brown, director of the State Highway Commission, said that he would favor legislation providing reasonable regulation of the truck business, but that he would oppose any effort to obtain legislation that would aid truck operators at the expense of other motorists.

Revision of laws governing motor truck freight transportation was suggested by Howell Ellis, member of the Indiana Public Service Commission, who explained that present laws were designed principally to fit the need of passenger buses. Bert O'Leary of Indianapolis was re-elected president of the association; W. S. Frye of Indianapolis, treasurer, and Mr. Snyder, secretary.

RELAY ADDS NEW HEAVY DUTY UNIT

Model 50B Is Offered in 2, 2½ and 3 Ton Capacities

(Continued from Page 1)

type with positive operated pump to take care of acceleration and is mounted on right side of engine.

To meet adequately the demands of all types of service the 50D gearset has five speeds forward and two in reverse. Gears and shafts are of nickel steel heat treated and ground.

There are two complete sets of brakes operating independently, service brakes operating in all four wheels, internal expanding hydraulic type. The hand brake is contracting on the propeller shaft.

Standard tire equipment on the 50D is 36x6 pneumatic front. The rear tire sizes will vary as follows, although they are all dual installations: Two-ton rating, 36x6 dual pneumatic; two and one-half-ton rating, 38x7 dual pneumatic; three-ton rating, 40x8 dual pneumatic.

The rear axle is Relay's own design with Relay pendulum suspension driver, which is claimed to have a number of advantages, both when power is being applied as when the truck is being started, or when the truck is moving along the road, or when it is stopped, accelerated or retarded. This construction, which permits the truck to move horizontally (forward and backward) with respect to the wheel center, is said to be of particular importance in connection with road irregularities. Any impact to which a road wheel is subjected has a vertical and horizontal factor.

RAILROADS IN FINLAND HIT BY BUS TRAFFIC

(Special from A. O. N. Washington Bureau)

Washington, Nov. 27.—Motor bus transportation in Finland is playing havoc with the railroads. Estimates show that motor bus routes cover a total of 40,000 kilometers, or seven times the distance traveresd by Finnish state railways, says a report to the Department of Commerce.

Abcut 1,500 buses are now in operation and it is reported that an additional 500 buses shortly will be in use.

WISCONSIN AXLES

Wisconsin superiority has been demonstrated for more than ten years; it can be demonstrated on any test. Built for trucks from 1½ tons to 7 tons, for busses and 6 wheelers.

WISCONSIN AXLE CO. Oshkosh, Wis.

Cumulative New Commercial Car Registration Table, October, 1929

Some of this data has been published previously, but it is given here complete for the convenience of our subscribers.

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Dover	Fargo	Federal	Ford	G. M. C.	International	Mack	Pierce-Arrow	Relay	Reo	Republic	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys-Knight	Miscellaneous	Totals	States
Arkansas		1	502		38		3	1	586	15	62	1			13		1		1	2	20	10	2		1258	Arkansas
Delaware		1	32		2				46	5	7				1						1	1			96	Delaware
Florida		3	149		15	1		1	206	3	21	1			7						1	2			410	Florida
Idaho			103		14	1	3		84	8	21				5	4	6				2	2		2	255	Idaho
Illinois	6	3	517	52	100		14	9	719	27	123	10			70			4	2		36	18		160	1870	Illinois
Kansas		2	199	2	28		2		268	13	46	11		1	9	1			3	1	15	2		2	605	Kansas
Maryland	7	10	154	2	33	1	4	10	274	19	23	14			13			7	2	7	6	13	1	11	611	Maryland
Michigan	1	2	611	8	72	6	14	23	1127	58	74	2		1	62	3	3			2	19	9	2	16	2115	Michigan
Minnesota			351	1	39	2	19	5	516	15	108	13		4	23		1				27	2		13	1139	Minn.
Missouri		5	401	15	52	6	6	9	507	28	50	16			11	2	3	2		3	18	2	1	10	1147	Missouri
Montana			100		10		2	2	145	6	32				1					1	4	1			304	Montana
New Hamp.	1	6	62		9		1	1	94	9	12	2			9				2	1	7	1	1	2	220	N. Hamp.
New Jersey	12	19	501	8	144		13	16	723	63	33	50	1	2	59	1	1	16	6	7	16	37	5	46	1779	N. Jersey
New Mexico			130		9		3		64	1	4				1		4				6			1	223	New Mex.
No. Carolina	4	5	445	1	66	1	5		413	8	18	5			8	4	1		3		6	3		10	1006	Nor. Car.
North Dak			146	1	8		3	1	130	6	68				1		1				15		1		381	Nor. Dak.
Ohio	11	8	715	7	130	8	11	12	1098	69	163	15		7	56	2	1	1	13	4	66	71	10	47	2525	Ohio
Oregon			151		25	2	2	10	246	16	16	2			5	1	7	10		5	2	4		53	557	Oregon
Rh. Island	4	2	60	3	22	2	4	5	127	22	7	10	1		26		2	1	6			4		2	310	Rh. Island
South Car.			224		14		1	1	177	4	16	1			1	1	1				1	3			445	South Car.
S. Dakota			119	1	13		1	2	109	1	63				8		1			1	8				327	S. Dakota
Utah			77		10		1		150	4	13	3			5		5			1	1	1	1	1	273	Utah
Virginia	2	4	177		37	3	2	2	180	14	35	3		1	13	2			4	1	5	8	2	10	505	Virginia
Washington			162		31		6	2	297	24	22	4			14		8			2	10	11	3	20	616	Wash'ton
W. Virginia		2	183	1	28		3	1	155	7	34				11	1	2		7		11	2			448	West Va.
Wisconsin	1		425	18	64	1	9	8	630	32	102			5	18		1	7	5	2	25	12		21	1386	Wisconsin
Dist. of Col.	2	1	54	6	12				138	20	8	4			4			3	1	1	3	2		2	261	Dist. Col.
Totals	51	74	6750	126	1025	34	132	121	9209	497	1181	167	2	21	454	22	49	51	55	41	331	221	29	429	21072	Totals

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Readers desiring county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies.

Commercial Car Registrations do not include buses.

Financial News of the Automotive Industry

The A. D. N. Analyst Looks Them Over

UNION CARBIDE AND CARBON CORPORATION

EARNINGS of the Union Carbide and Carbon Corporation, which numbers among its products several important items for the automotive industry, were 23 per cent. higher in the third quarter of this year than in the corresponding period last year. If the showing of the fourth quarter is as good, the net income for the year will approach $37,000,000, or about $4 a share on the outstanding common stock.

The net income for the first nine months of the year amounted to $24,051,000, equal to $2.89 a share, as compared with $19,629,000, or $2.39 in the corresponding period of last year. The financial condition of the company is strong and the outlook bright, the business not depending on any one industry.

Among the products of the company are calcium carbide, ferro-silicon, aluminum and copper silicon, electro-furnace alloys, gasoline stabilizers, stabilized gasoline, Eveready batteries, dry cells, etc. The company has entered the radio field with the manufacture of A. C. batteryless and battery operated receiving sets. These products are distributed through 100 sales offices throughout the United States and Canada, which are served by 343 warehouses. Plants and factories controlled by the company exceed 140.

Recent acquisitions by the company include the American Carbolite Company, Inc., Acheson Graphite Corporation, Michigan Ox-Hydric Company, Memphis Oxygen and Compressed Gas Company, Meraker Smelting Company, Ltd., of Norway and the Long Park holdings of the Vanadium Alloys Corporation. A new company is being formed, to be known as the Raytheon Production Company, to acquire practically all of the assets of the Raytheon Manufacturing Company and the National Carbon Company, the latter a subsidiary already of the Union Carbide and Carbon Corporation. The company is continuing its policy of adding to its mineral resources whenever possible.

The Union Carbide and Carbon Corporation is a holding company which was incorporated in 1917 to combine the Union Carbide Company, National Carbon Company, Inc., Linde Air Products Company and the Prest-O-Lite Company.

The capital stock consists of 12,000,000 shares of no par common stock, of which 8,921,033 shares are outstanding. The stock was split three-for-one in April of this year and in September rights were issued to holders giving them the right to purchase one new share at $80 for each 12½ shares held. The stock is listed on the New York and Chicago Stock Exchanges. The funded debt of the company's subsidiaries amounts to $13,078,500.

Earnings of the company over the past seven years have shown an excellent expansion, with an increase being shown in every year over the last. The net income in 1922 amounted to $11,716, and exceeded $16,000,000 in both 1923 and 1924. Then came a jump to $20,000,000 in 1925, to $24,000,000 in 1926, $25,340,000 in 1927 and $30,000,000 in 1923. Few companies can boast of such a steady and rapid expansion over recent years.

Following is a balance sheet for the company, as of December 31, 1928, as compared with December 31, 1927:—

	1928	1927
ASSETS		
Land, buildings, equipment and machinery	$197,679,234	$180,430,460
Real estate leaseholds	519,666	527,515
Patents and good will	1	1
Other investments:		
Real estate mortgages	314,066	341,333
Notes receivable	5,170,196	143,588
Other securities	3,976,404	2,389,537
Bond discount	310,098	324,405
Prepayments	1,419,540	1,132,902
Current assets:—		
Cash	17,502,924	16,267,387
Trade notes receivable	2,272,059	1,995,608
Trade accounts receivable	16,238,458	13,764,021
Other notes and accounts receivable	1,724,365	1,995,328
Inventories	32,321,962	29,157,531
Total current assets	$ 70,059,769	$ 63,179,875
Total assets	$281,510,353	$249,562,760
LIABILITIES		
Capital stock	$116,621,425	$109,112,421
Pref'd capital stock of subsidiary companies	7,350,000	6,350,000
Funded debt subsidiary companies	13,112,000	13,379,500
Reserve for depreciation, etc.	44,363,008	36,493,028
Surplus	86,606,036	72,557,918
Current liabilities:—		
Notes payable	118,263	109,955
Accounts payable	4,554,063	3,580,849
Accrued taxes	4,103,598	3,454,001
Dividends accrued and payable	4,187,775	4,064,266
Bond and mortgage interest accrued	205,432	209,114
Other accruals	288,748	251,708
Total current liabilities	$ 13,457,884	$ 11,669,893
Total liabilities	$281,510,353	$249,562,760

Continental Motors Shows Big Gain in Stockholders in Year

Detroit, Nov. 27.—"More and more have the careful people of the nation come to regard the going units of the automotive industry an attractive and a safe investment," says R. W. Judson, president of the Continental Motors Corporation. "By this, I do not mean from the speculative angle, but purely as a means of making savings earn money for them.

"A concrete evidence of this is the remarkable increase in stockholders in the Continental Motors, which amounted to more than 100 per cent. in one year. In October, 1928, there were 11,336 stockholders in this corporation. On October 31, 1929, this number had grown to 23,750.

"This we believe is among the greatest gains made by any industrial organization in the world during the year. The reason for the popularity of these shares is that the two big plants of Continental at Detroit and Muskegon not only have worked continuously in the production of motors for varied forms of transportation and stationary power plants, but have added an aircraft engine division that has attracted widespread attention through the efficiency of the radial type of engine.

"Continental, with its vast resources has enlarged facilities to take care of new customers and so diversified is the product of the corporation that operation is continuous and not subject to peaks and depressions. Ownership of the corporation now is truly continental, having shareholders in every state in the Union, in the provinces of Canada and many foreign countries."

TRENTON TRANSIT CO. RESULT OF MERGER

Trenton, N. J., Nov. 27.—The Central Transportation Company has been merged with the Trenton and Mercer County Corporation. The new name of the merged company is the Trenton Transit Company. This announcement was made today by Rankin Johnson, who continues as president.

At the time of the Trenton Mercer County Traction Corporation extended and provided additional transportation facilities for Trenton and vicinity by the operation of buses, it was necessary under the law to form a separate operating company. Present laws permit the traction company to operate the buses.

The commodious waiting room and office building of the company on Perry Street near Broad has been completed and the Trenton Transit Company will remove its executive offices from the Broad Street Bank Building to the new structure December 1.

CRUDE OIL AVERAGE GAINS WEEK OF NOV. 23

New York, Nov. 27.—The American Petroleum Institute estimates that the daily average gross crude oil production in the United States for the week ending November 23, 1929 was 2,633,250 barrels, as compared with 2,620,000 barrels for the preceding week an increase of 13,250 barrels. The daily average production east of California was 1,933,750 barrels, as compared with 1,945,500 barrels, a decrease of 11,750 barrels.

Imports of petroleum (crude and refined oils) at the principal United States ports for the week ended November 23, totaled 1,808,000 barrels, a daily average of 258,285 barrels, compared with 2,190,000 barrels, a daily average of 312,857 barrels for the week ended November 16, and a daily average of 270,071 barrels for the four weeks ended November 23.

DURANT ACCEPTANCE CORP. SENDS OUT FINAL CHECKS

Detroit, Nov. 27.—The Durant Acceptance Corp., in process of dissolution, has mailed to several thousand stockholders checks for their holdings on basis of $15.01 for each share held. The stock was originally sold publicly at $15 a share, the corporation retaining $12.75 a share after selling commissions. Basis of present distribution indicates the corporation earned a profit of $2.25 a share up to the time of its dissolution.

TWO APPEALS AFFECTING MOTOR TAXES DISMISSED

Washington, Nov. 27.—The Supreme Court of the United States has dismissed appeals in two cases from the District Court for the Northern District of California.

Williams et al. v. Riley, questioned the validity of the California motor vehicle fuel tax on the ground that the proceeds were used to support public highways when those highways are aided by Federal legislation which provides that no "toll" shall be charged for the use of them.

Bekins Van Lines, Inc., et al. v. Riley, questioned the validity of the gross receipts tax imposed upon freight-carrying motor vehicles operating for hire along public highways and between fixed termini and over regular routes in California.

In the Bus Field

Emmetsburg, Ia., Nov. 27. — Red Ball Transportation has filed application for permit to extend its bus route from Algona to Spencer, serving Whittemore, Emmetsburg and Ruthven. In the past five years four bus lines have had permit to operate through this territory ,but all of them were forced to abandon the project because of lack of patronage.

Fort Wayne, Ind., Nov. 27.—The Public Service Commission today approved the application of George W. Snell & Son, Winona Lake, for permission to operate a trucking line between Fort Wayne and Warsaw, Ind.

NASH

POLICIES ALWAYS BASED ON

FAIRNESS

IN the motor car industry, it is common knowledge that Nash dealer policies always have been based on absolute fairness. Nash dealers know that their factory is making a constant effort to protect dealer profits. Nash production is constantly based on the requirements of the selling organization, and dealer stocks are held low, to permit rapid turnover with the minimum investment. The most valuable asset of Nash—an asset jealously guarded by everyone from C. W. Nash down—is this dealer policy and the confidence, loyalty and independence of the Nash dealer organization which that policy has produced!

TWIN-IGNITION EIGHT
PRICED FROM $1625 TO $2260
f. o. b. factory

TWIN-IGNITION SIX
PRICED FROM $1295 TO $1695
f. o. b. factory

SINGLE SIX
PRICED FROM $915 TO $1075
f. o. b. factory

A PARTIAL LIST OF 1930 NASH "400" FEATURES

New Body Designs—Long Wheelbases—Radiators with Built-in Automatic Shutters—Powerful Motors—7-Bearing, Hollow Crankpin Crankshafts—Self-Energizing, Cable-Actuated 4-Wheel Brakes—Fuel Feed Pump—Centralized Chassis Lubrication—Double Action Hydraulic Shock Absorbers—Adjustable Front Seats—Steel Spring Covers, with Sealed-in Lifetime Lubrication—World's Easiest Steering—Starter Control on Instrument Panel—Insulated floorboard and dash—AND THESE ADDITIONAL FEATURES IN THE EIGHT: Straight-Eight, Twin-Ignition, 16 Spark Plug, High-Compression, Valve-in-Head Motor—9-Bearing, Integrally Counterweighted Hollow Crankpin Crankshaft—Aluminum Connecting Rods—Steering Shock Eliminator—All windows, doors, windshields, Duplate Non-Shatterable Plate Glass.

A complete line in a price class that meets the requirements of almost every prospective purchaser

(1367)

MAJOR SPECIFICATIONS AND MECHANICAL DETAILS OF

Make and Model	Capacity—tons	Chassis price	Engine	No. of Cyl.	Bore and Stroke	Tax H. P.	Oil System	Carburetor	Fuel Feed	Ignit. System	Gearset	Location	No. Spds. for.	Rear Axle	Final Drive	Reduction in Low	Brakes, foot	Brakes, hand	Standard Wheel Base	Chassis Weight	Standard Tire Sizes Front	
Am. La France Chief	2	3650	Own	6	3¾x5	33.0	Pw	Str	Vac	Rem	Own	C	4	Tim	Wo	31.2	4	D	156	6200	32x6	32x6 D
Am. La France W	3-4	3950	Own 2 R	4	4¼x6	28.9	P&S	Zen	Vac	A B	Own	C	4	Own	D R	47.4	D	R	160	7200	S 36x5	S 36x5 D
Am. La France S	4-4½	5200	Own 5 R	4	4¾x6	36.2	P&S	Zen	Vac	A B	Own	C	4	Own	Wo	54.4	D	R	165	8900	S 36x6	S 36x6 D
Am. La France V	5	5500	Own 5 R	4	4¾x6	36.2	P&S	Zen	Vac	A B	Own	C	4	Own	Wo	54.4	D	R	165	9800	S 36x5	S 40x6 D
Am. La France Z	6½	5750	Own 5 R	4	4¾x6	36.2	P&S	Zen	Vac	A B	Own	C	4	Own	Wo	63.5	D	R	165	10000	S 36x7	S 40x7 D
Am. La France U	7½	6000	Own 5 R	4	4¾x6	36.2	P&S	Zen	Vac	A B	Own	C	4	Own	—	63.5	D	R	165	10500	S 36x7	S 40x8 D
Am. La Fran. Big Chief	6		Own	6	4½x6	48.6	Pw	Zen	Vac	Rem	Own	C	4	Own	D R	32.8	W	D	226	10600	S 40x8	40x8 D
Autocar S A	1½	2700	Her	6	3¾x4½	33.8	Pb	Zen	Vac	L-N	Br-L 35	U	4	Own S A	Sp	27.9	4	R	150	4400	32x6	32x6
Autocar S D	2	3000	Her	6	3¾x4½	33.8	Pb	Zen	Vac	L-N	Br-L 35	U	4	Own S D	D R	33.9	4	R	150	4850	32x6	32x6 D
†Autocar H	3	3750	Own	4	4½x5½	32.4	C S	Str	Gra	A B	Own T	U	4	Own H	D R	48.9	R	R	114	5800	34x5 S	36x10 S
†Autocar S H	3	4000	Her	6	4⅛x4¾	40.8	Pb	Str	Gra	R B	Own T	U	4	Own H	D R	48.9	R	R	114	5800	34x5 S	36x10 S
Autocar T	3	5000	Her	6	4⅜x4¾	45.9	Pb	Str	Vac	R B	Own T	U	4	Own T	D R	72.5	R	R	187	7100	36x8	36x8 D
†Autocar H S	3½	4100	Own	4	4½x5½	32.4	C S	Str	Gra	A B	Own T	U	4	Own J	D R	55.2	R	R	114	6900	34x6 S	36x12 S
†Autocar S H S	3½	4400	Her	6	4⅜x4¾	45.9	Pb	Str	Gra	R B	Own T	U	4	Own J	D R	55.2	R	R	114	7000	34x6 S	36x12 S
Autocar T S	3½	5350	Her	6	4⅜x4¾	45.9	Pb	Str	Vac	R B	Own T	U	4	Own Chs	D R	81.7	R	R	187	7100	36x8	36x8 D
Autocar S C M	5	5000	Her	6	4½x4¾	48.6	Pb	Str	Vac	R B	Own B	C	4	Own M	D R	72.1	R	R	162	8600	34x7 S	36x14 S
Brockway 65	1	1195	Con 16 C	6	3⅜x4⅝	27.3	Pb	Zen	Vac	Aut	Br-L 20	U	3	Col 36020	Sp	21.3	4	Tr	137	3400	30x5	30x5
Brockway 75	1¼	1290	Con 16 C	6	3⅜x4⅝	27.3	Pb	Zen	Vac	Aut	Br-L 20	U	4	Col 36020	Sp	25.6	4	Tr	137	3450	32x6	32x6
Brockway 90	1½	1525	Con 16 C	6	3⅜x4⅝	27.3	Pb	Zen	Vac	Aut	Br-L 20	U	4	Col 55001	Sp	25.6	4	Tr	149	3850	32x6	32x6
Brockway Junior	1	1195	Wis C	4	3¾x5	22.5	Pb	Zen	Vac	Aut	Br-L 20	U	3	Col 36020	Sp	21.27	4	Tr	130	3100	30x5	30x5
Brockway J F	1	1195	Wis F	6	3¼x4¼	25.4	Pb	Zen	Vac	Aut	Br-L 20	U	3	Col 36020	Sp	21.3	4	Tr	137	3450	30x5	30x5
Brockway C J B F	1½	1475	Wis F	6	3¼x4¼	25.4	Pb	Zen	Vac	Aut	Br-L 20	U	3	Col 55001	Sp	21.3	4	Tr	149	3650	32x6	32x6
Brockway E	1½	1765	Wis S U	4	4 x5	25.6	Pb	Zen	Vac	L-N	Br-L 30	U	3	Col 55001	Sp	21.0	4	Tr	139½	3650	32x6	32x6
Brockway S	2	2450	Wis S U	4	4 x5	25.6	Pb	Zen	Vac	L-N	Br-L 35	U	4	Wis 4610	D R	38.79	R	Tr	150¼	5100	S 34x4	S 34x8
Brockway S Y	2	2950	Wis Y	6	3⅜x5	27.3	Pb	Zen	Vac	L-N	Br-L 35	U	4	Wis 4610	D R	35.3	4	Tr	151¾	4950	32x6	34x7
*Brockway K	3	3420	Con K	4	4⅛x5½	27.2	Pw	Zen	Vac	Eis	Br-L 35	C	4	Tim 65700	Wo	41.5	R	D	154⅛	5855	S 36x5	S 36x10
Brockway K R	3	3625	Con L	4	4½x5½	32.4	Pw	Zen	Vac	Eis	Br-L 55	C	4	Tim 65700	Wo	36.38	R	D	160⅝	6290	S 36x5	S 36x10
Brockway K W	3	3950	Wis H	6	4 x5	38.2	Pb	Zen	Vac	L-N	Br-L 51	U	4	Wis 1228	D R	33.7	R	D	170	6920	34x7	D 34x7
*Brockway R	4	4200	Con L	4	4½x5½	32.4	Pw	Zen	Vac	Eis	Br-L 55	C	4	Tim 66600	Wo	46.8	R	R	164	7890	S 36x5	S 36x12
Brockway T	5-7	5200	Con B 7	4	5 x6	40.0	Pw	Zen	Vac	Eis	Br-L 60	C	4	Tim 68700	Wo	53.5	R	D	175	10065	S 36x6	S 40x14
Chevrolet	½	400	Own	6	3⅛x3⅜	26.3	C S	Car	P	Rem	Own	U	3	Own	Sp	12.63	4	R	107	1815	4.50x20	4.50x20
Chevrolet	1½	545	Own	6	3⅛x3⅜	26.3	C S	Car	P	Rem	Own	U	4	Own	Sp	30.05	4	R	131	2375	30x5	30x5
Commerce 20 Y	1	1600	Bud H S 6	6	3⅜x4½	27.3	Pw	Zen	Vac	Aut	Br-L	U	4	Col	Sp	25.5	4	D	142	3900	B 30x5	B 30x5
Commerce S 11 Y	1½	1900	Bud H S 6	6	3⅜x4½	27.3	Pw	Zen	Vac	Aut	Br-L	U	4	Tim	Sp	29.2	4	D	162	4300	B 30x5	D B 30x5
Commerce 30 Z	1½	2900	Bud D S 6	6	3⅝x5	31.2	Pw	Zen	Vac	Aut	Br-L	U	4	Tim	Wo	34.8	4	D	168	4700	B 34x5	D B 34x5
Commerce 40 Z	2	3240	Bud D S 6	6	3⅝x5	31.2	Pw	Zen	Vac	Aut	Br-L	U	4	Tim	Wo	34.8	4	D	168	4900	B 36x6	D B 36x6
Commerce 50 Z	2½	4415	Bud B U S	6	4 x5¼	38.4	Pw	Zen	Vac	Aut	Br-L	U	5	Tim	Wo	63.0	4	D	175	7000	S 36x5	S 36x10
Commerce 60 Z	3	4480	Bud B U S	6	4 x5¼	38.4	Pw	Zen	Vac	Aut	Br-L	U	5	Tim	Wo	63.0	4	D	175	7100	S 36x5	S 36x12
Commerce 70 Z	3½	5250	Bud B A 6	6	4⅛x5¼	40.8	Pw	Zen	Vac	Aut	Br-L	C	7	Tim	Wo	98.2	R	D	175	8200	S 36x6	S 36x12
Commerce 80 Z	4	5330	Bud B A 6	6	4⅛x5¼	40.8	Pw	Zen	Vac	Aut	Br-L	C	7	Tim	Wo	98.2	R	D	175	8400	S 36x6	S 36x14
Day Elder M F	1¼	1345	Con 16-C	6	3⅜x4⅝	27.3	Pb	Zen	Vac	Rem	Br-L 20A	U	3	Tim 52000 H	Sp	24.2	4	D	131	3500	30x5	30x5
Day Elder G F	1½	2100	Con 16-C	6	3⅜x4⅝	27.3	Pb	Zen	Vac	Rem	Br-L 20A	U	3	Tim 54000 H	Sp	28.3	4	D	156	4400	30x5	30x5 D
Day Elder H F	2	2550	Con 16-C	6	3⅜x4⅝	27.3	Pb	Zen	Vac	Rem	Br-L 35	U	4	Tim 63702 H	Wo	40.7	4	D	156	4900	S 34x4	S 34x7
Day Elder J F	3	3900	Con 18 R	6	4 x4½	38.4	Pb	Zen	Vac	Rem	Br-L 51	U	4	Tim 65001 H	Wo	41.5	4	D	156	6900	34x7	34x7 D
Day Elder K F	4-5	5000	Con 21 R	6	4⅛x4¾	45.9	Pb	Zen	Vac	Rem	Br-L 60	C	4	Tim 66702 DH	Wo	55.2	4	D	162	9500	S 36x5	S 36x12
Diamond T 151	1	1095	Con 18 E	6	3⅛x4	27.3	Pb	Zen	Gra	Aut	Cov	U	3	Col	Sp	—	4	D	132	3200	30x5	30x5
Diamond T 290	1½	1475	Her W X A	6	3½x4½	29.4	Pb	Zen	Vac	Aut	Cov	U	4	Col	Sp	—	4	D	156¼	4160	30x5	30x5 D
Diamond T 302	2	1650	Her W X B	6	3¾x4½	33.8	Pb	Zen	Vac	Aut	Cov	U	4	Clark	Sp	—	4	D	157¾	4600	32x6	32x6 D
Diamond T 502	2½	2675	Her W X C	6	4 x4½	38.4	Pb	Zen	Vac	Aut	Cov	U	4	Tim	Wo	—	4	D	163	5850	34x7	34x7 D
Diamond T 505	2½	2875	Her W X C	6	4 x4½	38.4	Pb	Zen	Vac	Aut	Cov	U	4	Wis	D R	—	4	D	171½	5850	34x7	34x7 D
Diamond T 550	2½	2195	Her W X C	6	4 x4½	38.4	Pb	Zen	Vac	Aut	Cov	U	4	Clark	Sp	—	4	D	165	5400	32x6	32x6 D
Diamond T 602	3	3510	Her Y X C	6	4⅛x4¾	45.9	Pb	Zen	Gra	Aut	Cov	A	4	Tim	Wo	—	4	D	163½	7450	36x8	36x8 D
Diamond T 700	3½	4850	Her Y X C	6	4⅜x4¾	45.9	Pb	Zen	Gra	Aut	Cov	A	4	Tim	Wo	—	R	D	162	8100	S 36x5	S 36x10
Diamond T 800	4	5325	Her Y X C	6	4⅜x4¾	45.9	Pb	Zen	Gra	Aut	Br-L	A	7	Own	Wo	—	4	D	195⅜	8300	36x8	4WH 36x8
Diamond T 1000	5	5500	Her Y X C 2	6	4½x4¾	48.6	Pb	Zen	Gra	Aut	Br-L	A	4	Tim	Wo	—	R	D	170½	10000	S 36x6	S 40x12
Diamond T 1600	8	7830	Her Y X C 3	6	4⅝x4¾	51.3	Pb	Zen	Vac	Aut	Br-L	A	7	Tim	Wo	—	4	4	190	11700	36x8	36x8 D
Diamond T 2500	10-12	9750	Wak G R B	6	5 x5¾	60.0	Pb	Zen	Gra	Aut	Br-L	A	7	Tim	Wo	—	4	4	194	13100	S 36x7	S4W 36x12
Dodge Bros.	½	665	Own	4	3⅝x4½	21.03	Pb	Stw	Vac	N E	Own	U	3	Own	Sp	15.2	4	D	110	1965	29x5.00 B	29x5.00 B
Dodge Bros.	¾	775	Own	6	3⅜x3⅞	27.3	Pb	Stw	Vac	N E	Own	U	3	Own	Sp	17.4	4	D	120	2510	31x5.25 B	31x5.25 B
Dodge Bros.	1	995	Own	6	3⅜x3⅞	27.3	Pb	Stw	Vac	N E	W-G	U	4	Own	Sp	23.8	4	D	130	2920	30x5	30x5
Dodge Bros.	1	1065	Own	6	3⅜x3⅞	27.3	Pb	Stw	Vac	N E	W-G	U	4	Own	Sp	23.8	4	D	140	2955	30x5	30x5
Dodge Bros.	1½	1345	Own	6	3⅜x3⅞	27.3	Pb	Stw	Vac	N E	Own	U	4	Own	Sp	36.8	4	D	150	3695	32x6	32x6
Dodge Bros.	1½	1415	Own	6	3⅜x3⅞	27.3	Pb	Stw	Vac	N E	Own	U	4	Own	Sp	36.8	4	D	165	3810	32x6	32x6
Dodge Bros.	2	1445	Own	6	3⅜x4½	27.3	Pb	Zen	Vac	N E	Own	U	4	Own	Sp	41.4	4	D	114	3725	32x6	34x7
Dodge Bros.	2	1545	Own	6	3⅜x4½	27.3	Pb	Zen	Vac	N E	Own	U	4	Own	Sp	41.4	4	D	150	3930	32x6	34x7
Dodge Bros.	2	1615	Own	6	3⅜x4½	27.3	Pb	Zen	Vac	N E	Own	U	4	Own	Sp	41.4	4	D	165	4070	32x6	34x7
Dodge Bros.	3	1745	Own	6	3⅜x4½	27.3	Pb	Zen	Vac	N E	Own	U	4	Own	Sp	46.3	4	D	135	4225	32x6	32x6 D
Dover	¾	595	Own	6	2¾x4½	18.27	P&S	Mar	Vac	Aut	Own	U	3	Own	Sp	—	4	4	110	2150	30x5	31x5.50
Durant Com. Chassis	½	495	Con	4	3⅛x4¼	18.2	Pb	Til	Vac	Aut	Own	C	3	Own	Sp	16.16	4	4	107	1670	28x4.75	28x4.75
Fargo Packet	½	545	Own	6	3 x4¼	21.6	Pb	Str	Vac	N E	Own	U	3	Own	Sp	14.29	4	Tr	——	1835	5.00x19	5.00x19
Fargo Clipper	¾	725	Own	6	3¼x4¼	23.4	Pb	Str	Vac	Rem	Own	U	3	Own	Sp	15.53	4	Tr	——	2325	5.50x18	5.50x18
Fargo Freighter	1	795	Own	6	3 x4¼	21.6	Pb	Str	Vac	N E	Own	U	4	Own	Sp	37.19	4	Tr	133	2785	6.00x20	32x6
Ford A A	1½	520	Own	4	3⅞x4¼	24.0	P&S	Zen	Gra	Own	Own	U	3	Own	Wo	*16.1	4	4	131½	2282	6.00x20	32x6
F. W. D.—H	2	3300	Wis S U	4	4 x5	25.6	Pb	Zen	Vac	Eis	Cotta	C	4	Own	St	38.1	4	R	121	5300	34x7	34x7
F. W. D.—H 6	2	3425	Wak	6	3½x4½	29.4	Pb	Zen	Vac	Eis	Br-L	U	4	Own	St	35.0	4	R	133	5500	34x7	34x7
F. W. D.—B	3	4200	Own	4	4⅜x5½	36.1	Pb	Str	Gra	Eis	Own	C	3	Own	St	35.6	4	R	124	6460	36x6 S	36x6 S
F. W. D.—B 5	3	4525	Own	4	4⅜x5½	36.1	Pb	Str	Gra	Eis	Own	C	5	Own	St	88.6	4	R	132	6800	36x6 S	36x6 S
F. W. D.—U 6	3½	4575	Wak	6	4 x4¾	38.6	Pb	Zen	Vac	Eis	Own	C	5	Own	St	88.6	4	R	148	7200	36x6 S	36x6 S
F. W. D.—BTL 4	2	3900	Wis S U	4	4 x5	25.6	Pb	Zen	Vac	Eis	Br-L	C	7	Own	St	84.7	4	R	120	6000	36x8	36x8
F. W. D.—B T	3	4742	Own	4	4⅜x5½	36.1	Pb	Str	Vac	Eis	Own	C	5	Own	St	101.0	4	R	133¾	7700	40x7 S	40x5 S D
F. W. D.—U 4	3	4575	Own	4	4⅜x5½	36.1	Pb	Str	Vac	Eis	Own	C	5	Own	St	88.6	4	R	148	7000	36x6 S	36x6 S
F. W. D.—X 6	6	6500	Wak	6	4¼x4¾	43.3	Pb	Zen	Vac	Eis	Own	C	5	Own	St	88.6	4	4	170	9500	36x8	36x8
Garford 20 Y	1	1600	Bud H S 6	6	3⅜x4½	27.3	Pw	Zen	Vac	Aut	Br-L	U	4	Col	Sp	25.5	4	D	142	3900	B 30x5	B 30x5
Garford S 11 Y	1½	1900	Bud H S 6	6	3⅜x4½	27.3	Pw	Zen	Vac	Aut	Br-L	U	4	Tim	Sp	29.2	4	D	162	4300	B 30x5	D B 30x5
Garford 30 Z	1½	2990	Bud D S 6	6	3⅝x5	31.2	Pw	Zen	Vac	Aut	Br-L	U	4	Tim	Wo	34.8	4	D	168	4700	B 34x5	D B 34x5
Garford 40 Z	2	3240	Bud D S 6	6	3⅝x5	31.2	Pw	Zen	Vac	Aut	Br-L	U	4	Tim	Wo	34.8	4	D	168	4900	B 36x6	D B 36x6
Garford 50 Z	2½	4419	Bud B U S	6	4 x5¼	38.4	Pw	Zen	Vac	Aut	Br-L	U	5	Tim	Wo	63.0	4	D	175	7000	S 36x5	S 36x10
Garford 60 Z	3	4480	Bud B U S	6	4 x5¼	38.4	Pw	Zen	Vac	Aut	Br-L	U	5	Tim	Wo	63.0	4	D	175	7100	S 36x5	S 36x12
Garford 70 Z	3½	5250	Bud B A 6	6	4¼x5⅛	40.8	Pw	Zen	Vac	Aut	Br-L	C	7	Tim	Wo	98.2	R	D	175	8200	S 36x6	S 36x12
Garford 80 Z	4	5330	Bud B A 6	6	4¼x5⅛	40.8	Pw	Zen	Vac	Aut	Br-L	C	7	Tim	Wo	98.2	R	D	175	8400	S 36x6	S 36x14
Gen. Mot. T 11-1001	*3800	625	Pontiac	6	3⅛x3¾	26.3	Pb	Mar	P	Rem	Pontiac	U	3	Pontiac	Sp	14.67	4	D	109⅜	1980	5.00x19 B	5.50x19 B
Gen. Mot. T 19-2001	*8000	1015	Pontiac	6	3⅛x3¾	26.3	Pb	Mar	P	Rem	Mun	U	4	Tim 5261-N	Sp	34.11	4	D	127¾	3075	32x6	34x7
Gen. Mot. T 19-2002	*8000	975	Pontiac	6	3⅛x3¾	26.3	Pb	Mar	P	Rem	Mun	U	4	Tim 5261-N	Sp	34.11	4	D	127¾	3000	30x5	30x5 D
Gen. Mot. T 19-2003	*6000	895	Pontiac	6	3⅛x3¾	26.3	Pb	Mar	P	Rem	Mun	U	4	Tim 5261-N	Sp	34.11	4	D	127¾	2925	5.50x20 B	32x6
Gen. Mot. T 30-3001	*10000	1530	Buick	6	3⅛x4⅝	26.3	Pb	Mar	P	Rem	Mun	U	4	Eat 1616	Sp	28.6	4	D	136	4200	32x6	36x8
Gen. Mot. T 30-3002	*10000	1505	Buick	6	3⅛x4⅝	26.3	Pb	Mar	P	Rem	Mun	U	4	Eat 1616	Sp	28.6	4	D	136	4125	32x6	32x6 D
Gen. Mot. T 30-3003	*8000	1395	Buick	6	3⅛x4⅝	26.3	Pb	Mar	P	Rem	Mun	U	4	Eat 1616	Sp	28.6	4	D	136	4075	6.00x20 B	34x7
Gen. Mot. T 42-4001	*12000	1885	Buick	6	3⅛x4⅝	26.3	Pb	Mar	P	Rem	Mun	U	4	Own	Sp	33.38	4	D	136	4690	32x6	38x9
Gen. Mot. T 42-4002	*12000	1790	Buick	6	3⅛x4⅝	26.3	Pb	Mar	P	Rem	Mun	U	4	Own	Sp	33.38	4	D	136	4640	32x6	32x6 D
Gen. Mot. T 42-4003	*10000	1685	Buick	6	3⅛x4⅝	26.3	Pb	Mar	P	Rem	Mun	U	4	Own	Sp	33.38	4	D	136	4510	7.00x20 B	36x8
Gen. Mot. T 60-5001	*16000	3215	Buick	6	3⅝x5	31.5	Pb	Mar	P	Rem	Mun	U	4	Tim 65706-N	Wo	44.81	4	D	140	6090	38x7	44x10
Gen. Mot. T 60-5002	*18000	3160	Buick	6	3⅝x5	31.5	Pb	Mar	P	Rem	Mun	U	4	Tim 65706-N	Wo	44.81	4	D	140	6425	36x8	36x8 D
Gen. Mot. T 60-5003	*14500	2800	Buick	6	3⅝x5	31.5	Pb	Mar	P	Rem	Mun	U	4	Tim 65706-N	Wo	44.81	4	D	140	6090	36x6	36x6 D
Gen. Mot. T 60 S-6101	*22000	3960	Buick	6	3⅝x5	31.5	Pb	Mar	P	Rem	Mun	U	4	Tim 66704-N	Wo	63.84	4	D	140¾	6920	38x7	38x9 D
Gen. Mot. T 60 S-6102	*19000	3695	Buick	6	3⅝x5	31.5	Pb	Mar	P	Rem	Mun	U	4	Tim 66704-N	Wo	63.84	4	D	140¾	6890	36x8	36x8 D
Gen. Mot K 102-6001	*28000	4250	Own 89	4	4½x6½	32.4	Pw	Zen	Vac	Eis	Mun	C	7	Tim 67600	Wo	86.3	R	R	160	9520	36x6 S	40x14 6
Gen. Mot. K 102-6002	*28000	4350	Own 89	4	4½x6½	32.4	Pw	Zen	Vac	Eis	Mun	C	7	Tim 67600	Wo	86.3	R	R	184	9600	36x6 S	40x14 S
Gramm B	1½	1395	Lyc S	6	3¼x4½	25.3	Pb	Zen	Vac	Aut	Cov	U	4	Tim	Sp	32	4	R	140	3300	30x5	30x5 D
Gramm C	2	1795	Lyc T S	6	3⅞x5	36.2	Pb	Zen	Vac	Aut	Cov	U	4	Tim	Sp	29	4	R	160	3800	32x6	32x6 D
Gramm D	2½	1995	Lyc T S	6	3⅞x5	36.2	Pb	Zen	Vac	Aut	Ful	U	4	Wis	D R	30	4	R	160	4920	32x6	32x6 D
Gramm E	3	2795	Lyc T S	6	3⅞x5	36.2	Pb	Zen	Vac	Aut	Ful	U	4	Wis	D R	35	4	R	150	5200	34x7	34x7 D
Gramm EY	3	3535	Con 20 R	6	4⅛x4¾	36.04	Pb	Zen	Vac	Aut	Ful	U	4	Wis	D R	26	4	R	190	6750	32x6	32x6 D

1929 COMMERCIAL CARS BUILT IN THE UNITED STATES

Make and Model	Capacity—tons	Chassis price	Engine	No. of Cyl.	Bore and Stroke	Tax H. P.	Oil System	Carburetor	Fuel Feed	Ignit. System	Gearset	Location	No. Spds. for.	Rear Axle	Final Drive	Reduction in Low	Brakes, foot	Brakes, hand	Standard Wheel Base	Chassis Weight	Standard Tire Sizes Front	Standard Tire Sizes Rear
Gramm GY	4	4345	Con 21 R	6	4⅜x4¾	45.9	Pb	Zen	P	L-N	Ful	U	4	Wis	D R	28	4	R	210	7200	34x7	34x7 D
Gramm HY	5	6545	Con 16 H	6	4¾x5¾	54.15	Pb	Zen	P	L-N	Ful	U	4	Wis	D R	25.2	4	R	236	9600	36x8	36x8 D
Gramm T-35	3	3595	Lyc T S	6	3⅞x5	36.2	Pb	Zen	Vac	Aut	Ful	U	4	Wis	D R	39.6	4	R	173	7100	36x5 S	36x10 S
Gramm T-45	4	3995	Lyc T S	6	3⅞x5	36.2	Pb	Zen	Vac	Aut	Ful	U	4	Wis	D R	39.6	4	R	173	7600	36x5 S	36x12 S
Gramm T-60	5	4745	Con 21 R	6	4⅜x4¾	45.9	Pb	Zen	Vac	Aut	Ful	U	4	Wis	D R	—	4	R	173	8700	36x6 S	36x14 S
Hahn 7 H	¾-1	1098	——	6	2⅞x4¾	19.84	P	Zen	Vac	Aut	Br-L	U	3	——	Sp	5.8	4	D	124	3100	——	——
Hahn 17 H	1-1½	1430	Cont	6	3⅜x4	—	P	Zen	Vac	—	Br-L	U	4	Tim	—	5.8	4	D	142	3750	——	——
Hahn 37 H-37 H L	2-2½	1925	Cont	6	3⅜x4	—	P	Str	Vac	—	Br-L	U	4	Tim	—	5⅛	4	D	153	4600	——	——
Hahn 39 H-39 H L	2½-3	2898	Cont	6	4 x4½	38.4	P	Str	Vac	—	Br-L	U	4	Tim	—	6⅛	4	D	164	5800	——	——
Hahn 47 H B-47 H B L	3-3½	3700	Cont	6	4 x4½	38.4	P	Str	Vac	—	Br-L	U	4	Tim	—	7.8	4	D	151	6900	——	——
Hahn 47 H D-47 H D L	3½-4	3900	Cont	6	4 x4½	38.4	P	Str	Vac	—	Br-L	U	4	Tim	—	7.8	4	D	151	7500	——	——
Hahn 67 H-67 H L	4-5	4950	Cont	6	4⅜x4¾	45.94	P	Str	Vac	—	Br-L	U	4	Tim	—	10.8	4	D	151	8842	——	——
Indiana 200	1	1195	Wis F	6	3¼x4½	25.3	Pb	Zen	Vac	Aut	Br-L 20	U	3	Col 36000	Sp	20.71	4	Tr	137	3400	30x5	30x5
Indiana 300	1½	1475	Wis F	6	3¼x5¼	25.3	Pb	Zen	Vac	Aut	Br-L 20	U	3	Col 55001	Sp	21.26	4	Tr	149	3650	32x6	32x6
Indiana 111 X W	2	1850	Her Ox	4	4 x5	25.6	Pb	Str	Vac	Eis	Br-L 35	U	4	Wis 4611	Sp	36.60	R	Tr	120	3830	32x6	32x6 D
Indiana 400	2	2495	Wis Y	6	3⅜x5	27.3	Pb	Str	Vac	Aut	Br-L 35	U	4	Cla B 506	Sp	30.33	4	Tr	157	4800	32x6	34x7
Indiana 115 A	2½	2740	Her Ox	4	4 x5	25.6	Pb	Str	Vac	Eis	Br-L 35	U	4	Cla B 720	Sp	42.80	R	Tr	132	5000	32x6	34x7 D
Indiana 615 A	2½	3070	Wis Y	6	3⅜x5	27.3	Pb	Str	Vac	Eis	Br-L 35	U	4	Cla B 720	Sp	30.33	R	Tr	136	5190	32x6	34x7 D
Indiana 126	3	3495	Her L	4	4½x5¾	32.4	Pb	Str	Vac	Eis	Br-L 557	C	7	Tim 65704	Wo	80.7	R	Js	162½	7400	36x5	36x10 S
Indiana 127	3	3190	Her K	4	4¼x5¾	28.9	Pb	Str	Vac	Eis	Br-L 51	U	5	Cla B 720	Sp	41.72	R	R	141	6490	32x6	34x7 D
Indiana 626	3	4185	Wis H	6	4 x5	38.4	Pb	Str	Vac	Eis	Br-L 55	C	7	Tim 65704	Wo	80.7	R	Js	168½	7625	36x6 S	36x10 S
Indiana 627	3	3725	Wis H	6	4 x5	38.4	Pb	Str	Vac	Aut	Br-L 55	U	4	Cla B 720	Sp	42.80	R	R	162½	6500	36x5 S	36x10 S
Indiana 127 A W	3	3625	Her K	4	4¼x5¾	28.9	Pb	Str	Vac	Eis	Br-L 51	U	5	Wis 69311	Sp	41.72	R	Tr	141	6800	32x6	34x7 D
Indiana 627 A W	3	3925	Wis H	6	4 x5	38.4	Pb	Str	Vac	Eis	Br-L 51	U	5	Wis 69311	Sp	41.72	R	Tr	147	6800	32x6	34x7 D
Indiana 138	4	4380	Her L	4	4½x5¾	32.4	Pb	Str	Vac	Eis	Br-L 60	C	7	Tim 66700 D	Wo	83.1	R	R	162½	7850	36x5	36x12 S
Indiana 638	4	4955	Wis H	6	4 x5	38.4	Pb	Str	Vac	Eis	Br-L 60	C	7	Tim 66700 D	Wo	83.1	R	R	168½	8100	36x5	36x12 S
Indiana 41	5	5460	Her G	4	4¾x5¾	36.1	Pb	Str	Vac	Eis	Br-L 60	C	7	Tim 68700 D	Wo	95.0	R	R	172	9600	36x6	40x12 S
Int. Harvester Sp. Del.	¾	720	Wak X A	4	3½x4½	19.6	Pb	Zen	Vac	Rem	Mec	U	3	Eat 502 R	Sp	15.1	4	4	124	2200	30x5.25	30x5.25
Int. Harv. 6 Spd. Spec.	1	820	Wak X A	4	3½x4½	19.6	Pb	Zen	Vac	Rem	Mec	U	3	Eat 1124	Sp	*52.6	4	4	124	2430	30x5	30x5
Int. Harvester S-24	1¼	1160	Lyc C T	4	3⅜x5	22.5	Pw	Zen	Vac	Rem	Own	U	3	Eat 1002	Sp	21.3	4	4	130	3200	30x5	30x5
Int. Harvester S-26	1¼	1310	Lyc 4 S L	6	3¼x4½	25.3	Pb	Zen	Vac	Rem	Own	U	3	Eat 1002	Sp	21.3	4	4	130	3250	30x5	30x5
Int. Harvester SF-34	1½	1450	Lyc C T	4	3⅜x5	22.5	Pw	Zen	Vac	Rem	Own	U	3	Eat 1502	Sp	22.6	4	4	140	3520	30x5	32x6
Int. Harvester SF-36	1½	1600	Lyc 4 S L	6	3¼x4½	25.3	Pb	Zen	Vac	Rem	Own	U	3	Eat 1502	Sp	22.6	4	4	140	3570	30x5	32x6
Int. Harvester SD-44	2	1590	Lyc C T	4	3⅜x5	22.5	Pw	Zen	Vac	A B	Own	U	4	Eat 2002	Sp	40.6	4	4	117	3700	30x5	32x6
Int. Harvester SD-46	2	1740	Lyc 4 S L	6	3¼x4½	25.3	Pb	Zen	Vac	A B	Own	U	4	Eat 2002	Sp	40.6	4	4	117	3750	30x5	32x6
Int. Harvester SF-46	2	1950	Lyc 4 S L	6	3¼x4½	25.3	Pb	Zen	Vac	Rem	Own	U	4	Eat 2002	Sp	40.6	4	4	140	4000	32x6	32x6 D
Int. .rvester 54-C	2½	3200	Own	4	4¼x5	28.9	C S	Zen	Gra	R B	Own	U	4	Own A M 428	Ch	51.8	R	D	140	6400	36x5	36x10
Int. Harvester 54	2½	3550	Own	4	4¼x5	28.9	C S	Zen	Gra	R B	Own	U	4	Eat 54 65000	D R	53.7	R	D	140	6345	36x5	36x8
Int. Harvester 74-C	3½	4550	Own	4	4¼x5	28.9	C S	Zen	Gra	R B	Own	U	4	Own A M 427	Ch	*86.0	R	D	154	8715	36x6	40x12
Int. Harvester 74	3½	4550	Own	4	4¼x5	28.9	C S	Zen	Gra	R B	Own	U	4	Eat 74 1000	D R	61.6	R	D	160	8175	36x6	40x12
Int. Harvester 104-C	5	3600	Own	4	4¼x5	28.9	C S	Zen	Gra	R B	Own	U	4	Own A M 427	Ch	86.0	R	D	154	8890	36x6	40x14
Int. Harvester HS-54	2½	3850	H-S 151	4	4¼x5½	28.9	Pb	Zen	Vac	R B	Own	U	5	Eat 54 65000	D R	60.5	4	4	*148	8000	36x5	36x12 S
Int. Harvester HS-54-C	2½	3850	H-S 151	4	4¼x5½	28.9	Pb	Zen	Vac	R B	Own	U	5	Own A M 428	Ch	63.8	4	4	*148	8665	34x5 S	36x12 S
Int. Harvester HS-74	3½	4850	H-S 152	4	4⅜x5½	36.1	Pb	Zen	Vac	R B	Own	U	5	Eat 74 1000	D R	70.5	4	4	*160	10700	34x5 S	36x7 D
Int. Harvester HS-74-C	3½	4850	H-S 152	4	4⅜x5½	36.1	Pb	Zen	Vac	R B	Own	U	5	Own A M 427	Ch	79.1	4	4	*160	11000	34x6 S	36x7 D
Int. Harv's'r NS-104-C	5	5500	H-S 152	4	4¾x5½	36.1	Pb	Zen	Vac	R B	Own	U	5	Own A M 427	Ch	90.5	4	4	*160	11095	34x6	36x8 D
*Larrabee 20	1	1595	Con 16 C	6	3⅜x4⅝	27.3	Pb	Zen	Gra	Rem	Br-L	U	3	Col	Sp	4.15	4	D	142	4170	30x5	30x5
*Larrabee 30	1½	1875	Con 16 C	6	3⅜x4⅝	27.3	Pb	Zen	Gra	Rem	Br-L	U	3	Col	Sp	4.15	4	D	161	4550	32x6	32x6
*Larrabee 40	2	2965	Con 16 R	6	4 x4⅛	38.4	Pb	Zen	Gra	Rem	Br-L	U	4	Wis	D R	5.35	4	D	176	5950	32x6	32x6 D
*Larrabee 50	2½	3285	Con 16 R	6	4 x4⅛	38.4	Pb	Zen	Gra	Rem	Br-L	U	4	Wis	D R	5.35	4	D	183	6030	32x6	32x6 D
*Larrabee 60	3	3980	Con 18 R	6	4 x4½	38.4	Pb	Zen	Gra	Rem	Br-L	U	4	Tim	Wo	5.35	4	D	195	7140	34x7	34x7 D
*Larrabee 70	3½	4600	Con 20 R	6	4⅛x4¾	40.8	Pb	Zen	Gra	Rem	Br-L	C	7	Tim	Wo	9.5	4	D	205	7740	34x7	34x7 D
Larrabee 80	5	5200	Con 21 R	6	4⅜x4¾	—	Pb	Zen	Gra	Rem	Br-L	C	7	Tim	Wo	—	4	D	205	9150	36x8	36x8 D
Mack BB	1½	3500	Own	4	4¼x5	28.9	P&S	Str	Vac	N E	Own	U	4	Own	Hyp	Opt	4	D	165½	——	32x6	32x6 D
Mack BB	1½	3600	Own	4	4¼x5	28.9	P&S	Str	Vac	N E	Own	U	4	Own	Hyp	Opt	4	D	177½	——	32x6	32x6 D
Mack AB	1½-2	3100	Own	4	4¼x5	28.9	P&S	Str	Gra	R B	Own	U	4	Own	Ch	Opt	R	D	2-Opt	——	36x4 S	36x7 S
Mack AB	1½-2	3550	Own	4	4¼x5	28.9	P&S	Str	Gra	R B	Own	U	4	Own	D R	Opt	R	D	2-Opt	——	36x4 S	36x7 S
Mack AB	2½-3	3500	Own	4	4¼x5	28.9	P&S	Str	Gra	R B	Own	U	4	Own	Ch	Opt	R	D	2-Opt	——	36x4 S	36x8 S
Mack AB	2½-3	3950	Own	4	4¼x5	28.9	P&S	Str	Gra	R B	Own	U	4	Own	D R	Opt	R	D	2-Opt	——	36x4 S	36x8 S
Mack BJ	3-4	5800	Own	6	4½x5½	43.6	P&S	Str	Vac	N E	Own	C	4	Own	D R	Opt	4	D	3-Opt	——	36x8	36x8 D
Mack AK	3½-5	5150	Own	4	5 x6	40.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	4	Js	3-Opt	——	36x5 S	36x5 D S
Mack AK	3½-5	5250	Own	4	5 x6	40.0	P&S	Str	Gra	R B	Own	C	4	Own	D R	Opt	4	D	3-Opt	——	36x5 S	36x5 D S
Mack AC	3½-5	4950	Own	4	5 x6	40.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	Js	R	3-Opt	——	36x5 S	40x10 S
Mack AC	5½-7	5500	Own	4	5 x6	40.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	Js	R	3-Opt	——	36x6 S	40x12 S
Mack AC	7½	6000	Own	4	5 x6	40.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	Js	R	3-Opt	——	36x7 S	40x14 S
Mack AP	7½	9500	Own	6	5 x6	60.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	R	Js	191	——	36x7 S	40x8 D S
Mack AB Tractor	5-6	3500	Own	4	4½x5	28.9	P&S	Str	Gra	R B	Own	U	4	Own	Ch	Opt	R	D	122½	——	36x4 S	36x4 D S
Mack AK Tractor	7-10	5150	Own	4	5 x6	40.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	4	Js	128	——	34x5 S	36x5 D S
Mack AC Tractor	7-10	4950	Own	4	5 x6	40.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	Js	R	128	——	34x5 S	36x5 D S
Mack AC Tractor	11-14	5500	Own	4	5 x6	40.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	Js	R	128	——	34x6 S	36x6 D S
Mack AC Tractor	15	6000	Own	4	5 x6	40.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	Js	R	128	——	34x7 S	36x7 D S
Mack AP Tractor	15	9500	Own	6	5 x6	60.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	R	Js	147	——	34x7 S	36x7 D S
Mack AC 6-wheel	10	7500	Own	4	5 x6	40.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	4 R	Js	2-Opt	——	36x7 S	40x12 S
Mack AP 6-wheel	10	12000	Own	6	5 x6	60.0	P&S	Str	Gra	R B	Own	J	4	Own	Ch	Opt	4 R	Js	2-Opt	——	36x7	40x12 S
Moreland A-6	*6800	1275	Con 34 L	6	2⅞x4¾	19.84	Pb	Zen	Vac	Aut	Br-L 20	U	4	Tim 52000 H	Sp	24.17	4	D	134	3000	32x6.75	32x6.75
Moreland R R-6	*9300	1850	Con 16 C	6	3⅜x4⅝	27.3	Pb	Zen	P	Aut	Br-L 35	U	4	Tim 54000 H	Sp	32.95	4	D	158½	4000	32x6	32x6
Moreland B-6	*12000	2200	Con 16 C	6	3⅜x4⅝	27.3	Pb	Zen	P	Aut	Br-L 35	U	4	Tim 63721 H	Wo	34.8	4	D	158½	4500	34x7	34x7
Moreland E-6	*15000	3600	Her W X C	6	4 x4½	38.4	Pb	Zen	P	Aut	Br-L 51	U	4	Tim 65000 H	Wo	34.8	*4	D	182	6000	34x7	34x7 D
Moreland Ex. 6	*19000	3750	Her W X C	6	4 x4½	38.4	Pb	Zen	P	Aut	Br-L 51	U	4	Tim 65704 N	Wo	46.0	*4	D	182	6500	36x4 S	36x8 S
Moreland H-6	*22000	4650	Her Y X C	6	4⅝x4¾	45.9	Pb	Zen	P	Aut	Br-L 55	C	7	Tim 66702 W	Wo	82.3	*R	D	196	8000	36x5 S	36x10 S
*Moreland B D W-6	*15000	3200	Her W X B	6	3¾x4	33.7	Pb	Zen	P	Aut	Br-L 35	U	4	Own	Wo	41	4	D	160	5800	34x7	34x7
*Moreland E D-6	*23000	4900	Her W X C	6	4 x4½	38.4	Pb	Zen	P	Aut	Br-L 51	U	5	Own	Wo	52.2	*4	D	196	8500	36x8	36x8
*Moreland H D S-6	*30000	5850	Her Y X C	6	4⅝x4¾	45.9	Pb	Zen	P	Aut	Br-L 60	C	7	Own	Wo	81.6	*4	D	220	10500	36x6 S	36x8
*Moreland S D-6	*34000	6450	Her Y X C 2	6	4½x4¾	48.6	Pb	Zen	P	Aut	Br-L 60	C	7	Own	Wo	89.0	*4	D	221	11500	36x7 S	36x10 S
*Moreland T D-6	*34000	8000	Con 15 H	6	4½x5¾	48.6	Pw	Str	P	Aut	Br-L 70	C	7	Own	Wo	98.5	*4	D	221	12500	36x7 S	36x10 S
*Fleet Arrow F A-1	1½-2	2450	Own F A	6	3½x5	29.5	Pb	Str	A P	Rem	Own	U	3	Own	Sp	33.3	4	Tr	140	3950	32x6.00	34x7
*Pierce-Arrow F A-1	1½-2	2450	Own	6	3½x5	29.4	Pw	Str	P F	Del	Own	U	3	Tim	St	21.4	4	Tr	140	4100	32x6	32x6 D
*Pierce-Arrow X A-1	2	3500	Own	4	4 x5½	25.6	Pw	Str	Pre	Del	Own	C	4	Own	Wo	44.2	D	R	150	6750	36x4	36x5 D S
*Pierce-Arrow X B-1	3	3750	Own	4	4 x5½	25.6	Pw	Str	Pre	Del	Own	C	4	Own	Wo	48.1	D	R	150	6830	36x5	36x5 D S
*Pierce-Arrow H B-1	5	4500	Own	4	4 x5½	25.6	Pw	Str	Pre	Del	Own	C	7	Own	Wo	95.0	D	R	156	8400	36x5	36x6 D S
*†Pierce-Arrow W C-1	4	5100	Own	4	4½x6¾	32.4	Pw	Str	Pre	Del	Own	C	4	Own	Wo	41.5	D	R	162	8780	36x5	36x6 D S
*†Pierce-Arrow R D-1	5	5400	Own	4	4½x6¾	32.4	Pw	Str	Pre	Del	Own	C	4	Own	Wo	40.5	D	R	162	9440	36x6	36x7 D S
*†Pierce-Arrow R F-1	7½	5600	Own	4	4½x6¾	32.4	Pw	Str	Pre	Del	Own	C	4	Own	Wo	51.9	D	R	168	10320	36x6	40x8 D S
†Pierce-Arrow R F-T	7½	5600	Own	4	4½x6¾	32.4	Pw	Str	Pre	Del	Own	C	4	Own	Wo	51.9	D	R	132	940	36x6	36x8 D S
Relay 20 B	1	1700	Bud H S 6	6	3⅜x4½	27.3	Pw	Zen	Vac	Aut	Br-L	U	4	Own	Relay	25.7	4	D	142	4100	B 30x5	B 30x5
Relay S 11 B	1½	1900	Bud H S 6	6	3⅜x4½	27.3	Pw	Zen	Vac	Aut	Br-L	U	4	Own	Relay	30.0	4	D	162	4500	B 30x5	D B 30x5
Relay 30 A	1½	2990	Bud D S 6	6	3⅜x5	31.2	Pw	Zen	Vac	Aut	Br-L	U	4	Own	Relay	34.5	4	D	168	5300	B 34x5	D B 34x5
Relay 40 A	2	3240	Bud D S 6	6	3⅜x5	31.2	Pw	Zen	Vac	Aut	Br-L	U	4	Own	Relay	34.5	4	D	168	5500	B 36x6	D B 36x6
Relay 50 C	2½	4415	Bud B U S	6	4 x5⅛	38.4	Pw	Zen	Vac	Aut	Br-L	U	5	Own	Relay	58.5	4	D	175	7300	B 36x6	S 36x10
Relay 60 C	3	4480	Bud B U S	6	4 x5⅛	38.4	Pw	Zen	Vac	Aut	Br-L	U	5	Own	Relay	58.5	4	D	175	7450	B 36x6	S 36x12
Relay 70 C	3½	5250	Bud B A 6	6	4⅛x5⅛	40.8	Pw	Zen	Vac	Aut	Cov	C	8	Own	Relay	84.2	R	D	175	8600	B 36x6	S 40x12
Relay 80 C	4	5330	Bud B A 6	6	4⅛x5⅛	40.8	Pw	Zen	Vac	Aut	Cov	C	8	Own	Relay	84.2	R	D	175	8800	B 36x6	S 40x14
Reo B A	½	895	Con 16 E	6	3⅜x4	27.3	Pb	Sch	Vac	Rem	W-G	U	3	Sal	Sp	14.63	4	Tr	115	2290	28x5.25	28x5.25
Reo D A	1	995	Con 16 E	6	3⅜x4	27.3	Pb	Sch	Vac	Rem	W-G	U	3	Own	Sp	18.4	4	Tr	123	2755	30x5	30x5
Reo D C	1	1075	Con 16 E	6	3⅜x4	27.3	Pb	Sch	Vac	Rem	W-G	U	3	Own	Sp	18.4	4	Tr	138	2850	30x5	30x5
Reo F A	1½	1295	Own	6	3⅜x5	27.3	Pb	Sch	Vac	Rem	Own	U	4	Own	Sp	22.96	4	Tr	137	3525	32x6	32x6
Reo F E	1½	1395	Own	6	3⅜x5	27.3	Pb	Sch	Vac	Rem	Own	U	4	Own	Sp	22.96	4	Tr	152	3700	32x6	32x6
Reo F F	1½	1395	Own	6	3⅜x5	27.3	Pb	Sch	Vac	Rem	Own	U	4	Own	Sp	22.96	4	Tr	156	3750	32x6	32x6
Reo F H	2	1545	Own	6	3⅜x5	27.3	Pb	Sch	Vac	Rem	Own	U	4	Own	Sp	37.6	4	Tr	142	4165	32x6	32x6 D

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Major Specifications and Mechanical Details of 1929 Commercial Cars Built in the United States

Make and Model	Capacity—tons	Chassis price	Engine	No. of Cyl.	Bore and Stroke	Tax H. P.	Oil System	Carburetor	Fuel Feed	Ignit. System	Gearset	Location	No. Spds. for.	Rear Axle	Final Drive	Reduction in Low	Brakes, foot	Brakes, hand	Standard Wheel Base	Chassis Weight	Standard Tire Sizes Front	Rear
·o F C	2	1595	Own	6	3⅜x5	27.3	Pb	Sch	Vac	Rem	Own	U	4	Own	Sp	37.62	4	Tr	152	4025	32x6	32x6 D
·o F D	2	1695	Own	6	3⅜x5	27.3	Pb	Sch	Vac	Rem	Own	U	4	Own	Sp	37.62	4	Tr	168	4075	32x6	32x6 D
·o G A	3	2035	Own	6	3⅜x5	27.3	Pb	Sch	Vac	Rem	Own	U	4	Own	Sp	41.05	4	Tr	163	4625	32x6	32x6 D
·o G C	3	2140	Own	6	3⅜x5	27.3	Pb	Sch	Vac	Rem	Own	U	4	Own	Sp	41.05	4	Tr	179	4850	32x6	32x6 D
·o G D	3	1985	Own	6	3⅜x5	27.3	Pb	Sch	Vac	Rem	Own	U	4	Own	Sp	46.2	4	Tr	134	4570	32x6	32x6 D
·public Fleetmaster	*7000	1295	Lyc	6	3¼x4½	—	Pb	Zen	Vac	Aut	Br-L	U	4	Cla	Sp	28.3	4	Tr	144	3300	6.00x20 B	32x6
·public F-1	*12000	2195	Lyc	6	3¼x4½	—	Pb	Zen	Vac	Aut	Ful	U	4	Eat	Sp	43.0	4	D	155	4850	32x6	32x6 D
·public H-1	*15000	2985	Lyc	6	3⅜x5	—	Pb	Zen	Vac	Aut	Ful	U	4	Eat	Sp	35.0	4	D	163	5750	34x7	34x7 D
·public L-1	*18000	3595	Lyc	6	3⅜x5	—	Pb	Zen	Vac	Aut	Ful	U	4	Eat	D R	48.0	4	D	180	6900	36x8	36x8 D
·public M-1	*20000	3300	Waukesha	6	4 x4¾	—	Pb	Zen	Vac	Aut	Br-L	U	5	Eat	D R	53.0	D	R	171	6900	36x8	36x8 D
·gby Model 401	1	*775	Con	4	3⅜x4¼	18.2	Pb	Til	Vac	Aut	Own	C	3	Own	Sp	14.79	4	4	107	2325f	28x4.75	28x4.75
·lden 7	¾-1	1098	Con 29 L	6	2⅞x4¾	19.8	Pb	Zen	Vac	Aut	Br-L	U	3	Tim	Sp	23.2	4	D	124	3100	30x5	30x5
·lden 17 C	1-1½	1430	Con 18 E	6	3⅜x4	27.3	Pb	Zen	Vac	Aut	Br-L	U	4	Tim	Sp	31.0	4	D	142	3750	30x5	30x5
·lden 37 C	2-2½	1950	Con 15 C	6	3⅜x4⅝	27.3	Pb	Str	Vac	Aut	Br-L	U	4	Tim	Sp	31.0	4	D	151	4600	30x5	30x5 D
·lden 39 C	2½-3	2898	Con 16 R	6	4 x4⅛	38.4	Pb	Str	Vac	Aut	Br-L	U	4	Tim	Sp	33.0	4	D	164	5800	32x6	32x6 D
·lden 47 CD	3½-4	3900	Con 18 R	6	4 x4½	38.4	Pb	Str	Vac	Aut	Br-L	U	4	Wis	D R	41.7	4	D	164	6900	34x7	34x7 D
·lden 67 C	4-5	4950	Con 21 R	6	4⅜x4⅜	45.9	Pb	Str	Vac	Aut	Br-L	C	7	Wis	D R	95.7	4	D	164	9000	36x8	36x8 D
·lden 77 B	5-7	——	Con 16 H	6	4⅜x5⅜	54.1	Pb	Str	Vac	Aut	Br-L	C	7	Wis	D R	95.7	R	D	171	10000	36x8	S 36x12
·lden 47 CB	3-3½	3700	Con 18 R	6	4 x4½	38.4	Pb	Str	Vac	Aut	Br-L	U	4	Tim	Sp	36.5	4	D	164	6700	34x7	34x7 D
·rvice 20 Y	1	1600	Bud H S 6	6	3⅜x4½	27.3	Pw	Zen	Vac	Aut	Br-L	U	4	Col	Sp	25.5	4	D	142	3900	B 30x5	B 30x5
·rvice S 11 Y	1½	1990	Bud H S 6	6	3⅜x4½	27.3	Pw	Zen	Vac	Aut	Br-L	U	4	Tim	Sp	29.2	4	D	162	4300	B 30x5	D B 30x5
·rvice 40 Z	2	3240	Bud D S 6	6	3⅜x5	31.2	Pw	Zen	Vac	Aut	Br-L	U	4	Tim	Wo	34.8	4	D	168	4900	B 36x6	D B 36x6
·rvice 60 Z	3	4480	Bud B U S	6	4 x5⅛	38.4	Pw	Zen	Vac	Aut	Br-L	U	5	Tim	Wo	63.0	4	D	175	7100	S 36x5	S 36x12
·rvice 80 Z	4	5330	Bud B A 6	6	4⅛x5⅛	40.8	Pw	Zen	Vac	Aut	Br-L	C	7	Tim	Wo	98.2	R	D	175	8400	S 36x6	S 36x14
·tandard 2½ K	2½-3½	3200	Con K 4	4	4⅛x5¼	27.2	Pb	Str	Vac	Aut	Br-L 35	C	4	Tim 65600	Sp Wo	34.8	R	D	147	5400	36x5 S	36x8 S
·tandard 3½ K	3½-5	4350	Con L 4	4	4½x5½	32.4	Pb	Str	Vac	Aut	Br-L 55	C	7	Tim 66700	Sp Wo	83.0	R	D	160	7485	36x5 S	36x12 S
·tandard 5 K	5-7	5250	Con B 5	4	4¾x6	36.1	Pb	Str	Vac	Aut	Br-L 60	C	7	Tim 68700	Sp Wo	83.6	R	D	164	8700	36x6 S	40x14 S
·tewart Buddy 21	¾	895	Lyc W S G	6	2⅞x4¾	19.8	Pb	Str	Gra	Rem	W-G	U	3	Sal	Sp	30.0	4	D	118	2694	30x5.50	30x5.50
·tewart Buddy 21 X	1	995	Lyc W S G	6	2⅞x4¾	19.8	Pb	Str	Vac	Rem	W-G	U	3	Sal	Sp	30.0	4	D	128	2806	30x5	30x5
·tewart 16	1¼	1295	Lyc C T	4	3¾x5	22.5	Pb	Str	Vac	Rem	Ful	U	4	Cla	Sp	24.0	4	D	130	3326	32x6	32x6
·tewart 16 X	1¼	1295	Lyc 4 S L	6	3¼x4½	25.3	Pb	Str	Vac	Rem	Ful	U	4	Cla	Sp	24.0	4	D	130	3326	32x6	32x6
·tewart 26 X W	2	2290	Lyc T	6	3⅝x5	31.5	Pw	Str	Vac	Rem	Ful	U	4	Tim	Wo	29.0	4	D	165	5095	32x6	32x6 D
·tewart 18 X	2½	2690	Lyc T	6	3⅝x5	31.5	Pw	Str	Vac	Rem	Ful	U	4	Tim	Wo	29.0	4	D	165	5788	32x6	32x6 D
·tewart 19 X	3½	3690	Lyc F	6	3⅞x5	36.2	Pw	Str	Vac	Rem	Ful	C	12	Tim	Wo	105.1	4	D	165	6990	36x5	36x10
·tewart 22 X	4	4200	Lyc F	6	3⅞x5	36.2	Pw	Str	Vac	Rem	Ful	U	12	Tim	Wo	34.8	4	D	165	7990	36x5	36x12
·tewart 28 X	1½	1495	Lyc 4 S L	6	3¼x4½	25.3	Pb	Str	Vac	Rem	Ful	U	4	Cla	Sp	27.3	4	D	136	3840	30x5	30x5 D
·tewart 29 X	2	1695	Lyc 4 S L	6	3¼x4½	25.3	Pb	Str	Vac	Rem	Ful	U	4	Cla	Sp	27.3	4	D	145	4188	32x6	32x6 D
·tewart 27 X	5-7	5700	Waukesha	6	4⅜x5⅛	45.99	Pw	Str	Vac	Rem	Ful	U	8	Tim	Wo	93.81	4	D	165	9700	36x7	40x7 D
·tudebaker GN-P	¾	845	Own	6	3⅜x4⅛	27.3	P C	Str	P	Rem	Own	U	3	Own	Sp	14.3	4	4	115	——	19x6.00	19x6.00
·tudebaker GN-S	1	1045	Own	6	3⅜x4⅛	27.3	P C	Str	P	Rem	Own	U	3	Own	Sp	13.8	4	Js	130	——	20x6.00	30x5
·tudebaker GK-N	1	1095	Own	6	3⅜x4⅜	27.3	P C	Str	P	Rem	Own	U	3	Own	Sp	13.7	4	Js	146	2330	30x5	30x5
·tudebaker GN-N	1¼	1245	Own	6	3⅜x4¼	27.3	P C	Str	P	Rem	Clark	U	4	Clark	Sp	33.5	4	Js	146	——	30x5	32x6
·tudebaker 77	2½	2765	Own	8	3½x4¾	39.2	P C	Str	P	Rem	Ful	U	3	Eat	Sp	19.8	4	Js	158	4745	20x6.75 B	20x6.75 B
·tudebaker 88	3	3165	Own	8	3½x4¾	39.2	P C	Str	P	Rem	Ful	U	3	Eat	Sp	19.8	4	Js	184	4920	20x7.50 B	20x7.50
·tudebaker 99	3½	3665	Own	8	3½x4¾	39.2	P C	Str	P	Rem	Ful	U	4	Eat	Dr	24.6	4	Js	184	5400	20x7.50 B	20x7.50
·ictor 35	1½	1895	Con	6	3⅜x4	27.3	Pu	Zen	Vac	Rem	Cov	U	3	Tim	Sp	—	4	D	144	3200	30x5	30x5 D
·ictor 45	2½	2495	Her	6	3⅜x4½	33.7	Pb	Zen	Vac	Rem	Ful	U	4	Wis	D R	—	4	D	148	4500	32x6	32x6 D
·ictor 75	3½	3895	Her	6	4 x4½	38.4	Pb	Zen	Vac	Rem	Ful	U	4	Wis	D R	—	4	D	162	6000	34x7	34x7 D
·hippet 96 A	½	380	Own 96 A	4	3⅛x4¾	15.6	Po	Til	Vac	Aut	Own	U	3	Own	Sp	14.75	4	R	103¼	1659	28x4.75	28x4.75
·hippet 6 C-101	1½	645	Own 98 A	6	3⅛x3⅞	23.4	Pb	Til	Vac	Aut	Ful	U	4	Cla-B 364	Sp	33.5	4	R	131	2540	30x5	30x5
White 15 B	1	1545	Own G K A	4	3⅜x5⅛	22.5	C S	Zen	Vac	L-N	Own	C	4	Own	Sp	18.6	R	R	133½	3242	30x5	30x5
White 57	1¼	2725	Own G R C	4	4 x5⅝	25.6	Pw	Zen	Vac	L-N	Own	U	4	Own	Sp	19.3	R	R	146	3755	32x6	32x6
White 20 A	1½	2125	Own G K A	4	3⅜x5⅛	22.5	C S	Zen	Vac	L-N	Own	C	4	Own	D R	32.1	R	R	145½	4412	34x5	34x5 D P
White 56	2	3125	Own G R C	4	4 x5⅝	25.6	Pw	Zen	Vac	Mag	Own	U	4	Own	Sp	26.2	R	D	165	5096	36x4 S	36x7 S
White 51 A	2½	3750	Own G R B	4	4¼x5⅝	28.9	Pw	Zen	Vac	Mag	Own	U	4	Own	Sp	35.5	R	D	170	6256	36x5 S	36x8 S
White 55	3½	4650	Own G R B	4	4¼x5¾	28.9	Pw	Zen	Vac	Mag	Own	U	4	Own	I G	66.1	D	R	174	8402	36x5 S	40x5 S D
White 52 T	3½	4709	Own G R B	4	4¼x5¾	28.9	Pw	Zen	Vac	Mag	Own	U	4	Own	I G	76.5	D	R	129½	8126	36x5 S	40x5 S D
White 52	5	5100	Own G R B	4	4¼x5⅝	28.9	Pw	Zen	Vac	Mag	Own	U	5	Own	I G	92.3	D	R	174	9184	36x6 S	40x12 S
White 58	3	4400	Own G R B	4	4¼x5⅝	28.9	Pw	Zen	Vac	Mag	Own	U	4	Own	I G	49.5	D	A	180	7400	36x5 S	36x5 S D
White 60	1	1850	Own 2 A	6	3½x4½	29.4	Pw	Zen	Vac	Rem	Own	U	3	Own	Sp	17.9	4	D	138	3562	30x5	30x5
White 61	1½	2450	Own 2 A	6	3½x4½	29.4	Pw	Zen	Vac	Rem	Own	U	4	Own	Sp	23.4	4	D	148	4612	30x5	30x5 D
Willys-Knight 15	1½	1545	Own K G T	6	2⅞x4¾	20.7	Pb	Til	Vac	Aut	Ful D U	U	3	Eat 1002	Sp	24.3	4	R	134	3300	30x5	32x6
Willys-Knight 16	1½	1595	Own K G T	6	2⅞x4¾	20.7	Pb	Til	Vac	Aut	Ful D U	U	3	Eat 1002	Sp	24.3	4	R	151	3400	30x5	32x6
Willys-Knight 20	2	1945	Own K G T	6	3⅜x4¾	27.3	Pw	Til	Vac	Aut	Ful D U	U	3	Eat 1504	Sp	28.4	4	R	150	3800	32x6	34x7
Willys-Knight 21	2	1995	Own K G T	6	3⅜x4¾	27.3	Pw	Til	Vac	Aut	Ful D U	U	3	Eat 1504	Sp	28.4	4	R	164	3900	32x6	34x7
Willys-Knight 25	2½	2545	Own K G T	6	3⅜x4¾	27.3	Pw	Til	Vac	Aut	Ful G U	U	4	Wis 6617 B	D R	30.3	4	R	150	4920	32x6	32x6 D
Willys-Knight 26	2½	2595	Own K G T	6	3⅜x4¾	27.3	Pw	Til	Vac	Aut	Ful G U	U	4	Wis 6617 B	D R	30.3	4	R	164	5020	32x6	32x6 D

GENERAL NOTATIONS

REFERENCE MARKS apply to individual lines only and explanations are given under the subdivision for each company in the **"SPECIAL NOTATIONS."**

APACITIES given in this table are in tons or fractions of tons. *Shows maximum allowable gross weight.

RE EQUIPMENT where not otherwise indicated is solid.

HEEL BASES given are standard, but optional wheel bases are available in many cases.

NGINE—Bud, Buda; Con, Continental; Her, Hercules; Kgt, Knight; Lyc, Lycoming; Wak, Waukesha; Wis, Wisconsin.

UBRICATION—Pb, pressure lubrication to main and connecting rod bearings; Pw, full pressure lubrication to all bearings, including wrist-pins; P&S, pressure with splash, CS, circulating splash; Sp, Splash.

ARBURETOR—Car, Carter; Hol, Holley; Joh, Johnson; Mar, Marvel; Sch, Wheeler-Schebler; Str, Stromberg; Stw, Detroit lubricator; Til, Tillotson; Zen, Zenith-Detroit.

EL FEED—Gra, Gravity; Pre, Pressure; Vac, Vacuum tank; P, Fuel pump; Auto-P, Auto pulse; E, Electric pump.

NITION—AB, American-Bosch; Aut, Electric Auto-Lite; Apo, Apollo; Del, Dayton Ergine Laboratory; Eis, Eisemann; L-N, Leece-Neville; N-E, North East; RB, Robert Bosch; Rem, Delco-Remy; Spf, Splitdorf.

RANSMISSION—Br. L, Brown-Lipe; Cov, Covert; Ful, Fuller; Mec, Mechanics Machine; Mun, Muncie; W-G, Warner Gear.

OCATION—C, Center, Amid; U, in unit with engine; J, Jack shaft.

REAR AXLE—Cla, Clark Equipment; Col, Columbia; Eat, Eaton; Sal, Salisbury; Tim, Timken, Wis, Wisconsin.

FINAL DRIVE—St, Straight bevel; Sp, Spiral bevel; Wo, Worm; DR, Double Reduction; Ch, Chain; IG, Internal Gear.

BRAKES—Js, Jack shaft; R, Rear wheels; D, Drive shaft; 4, four-wheel; Tr, Transmission; W, Westinghouse air brake.

YRES—B, Balloon; D, Dual; S, Solid.

SPECIAL NOTATIONS

AMERICAN-LA FRANCE

Chief model also available as 2½-ton model, 34x7 tire, dual rear, weight 6,400. Price $3,900.

AUTOCAR

†Engines in these models are located under the driver's seat.

DURANT LINE

*Price includes panel body.

GENERAL MOTORS TRUCK LINE

*Capacity given in all cases is maximum allowable total gross weight (straight rating), and includes chassis, cab, equipment, body and load.

Model T-19 is also available in three other types, with 145¾-inch wheel base having same straight ratings and standard tire combinations as listed for the 127¾-inch wheel base types shown in the table.

Model T-30 is also available in six other types, with 152 and 164 inch wheel bases, respectively, having same straight ratings and standard tire combinations as listed for the 136-inch wheel base types shown in the table.

Model T-42 is also available in nine other types, with 152, 164 and 175 inch wheel bases respectively, having same straight ratings and standard tire combinations as listed for the 136-inch wheel base types shown in the table.

Model T-60 is also available in nine other types, with 160, 180 and 200 inch wheel bases, respectively, having same straight ratings, and standard tire combinations as listed for the 140-inch wheel base types shown in the table.

Model T-60 Special is also available in six other types with 160¾, 180¾ and 200¾ inch wheel bases, respectively, having same straight ratings and standard tire combinations as listed for the 140¾-inch wheel base types shown in the table.

Optional rear axle gear ratios are available for all types and optional tire equipment is available for all types except Model T-11-1001.

FLEET-ARROW LINE

*Model F. A. 1 is also available as Model F. A. 2, at $2,500 on wheel base of 160 inches, weight 3,975 lbs., and as Model F. A. 3, at $2,570, with seven speed transmission on 130-inch wheel base, weight, 3,985 lbs.

GRAMM

*Models B, C, D and E are furnished in three wheel base lengths—others on request.

*Model T Series—Larger engines, pneumatic tires and special wheel bases, and 8 speed transmissions—optional at extra cost.

Model "GY"—190 and 210 in. wheel bases.

Model "HY"—210 and 236 in. wheel bases.

*Model "HY"—210 and 236 in. wheel bases. Tire sizes and electrical equipment optional, depending upon type of service—Coach or Van.

*Above models are all built in tractor wheel base lengths for semi-trailer use.

HAHN LINE

*Model 22 also available as Model 26, priced $1,495, on 144-inch wheel base, with Buda H. S. engine, 6-cyl. 3⅜x4½ inches rated 27.3 h.p., weight 3,200 lbs.

*Model 34 also available as Model 36, with Buda H. S. 6 engine (described above), weight 3,850 lbs.

*Model 44 also available as Model 46, priced $2,410, on 156-inch wheel base, with Buda H. S. 6 engine, as in Model 26, weight 4,200 pounds.

†Model 56 also available on 171-inch wheel base.

INTERNATIONAL HARVESTER LINE

*Model HS-54 also available in the following wheel bases, 130-inch tractor, 170, 185 and 200-inch.

*Model HS-54-C also available in the following wheel bases, 130-inch tractor, 170, 185 and 200-inch.

†Frame is reinforced with inserted channels in each side rail, extending from dash to rear end.

*Model HS-74 also available in the following wheel bases, 144-inch tractor, 185, 210 and 235-inch.

*Models HS-74-C and HS-104-C also available in the following wheel bases, 146-inch tractor, 185, 210 and 235-inch.

All Model HS heavy-duty International truck models are equipped with built-in vibration dampered clutches.

LARRABEE

*Note—Bevel gear, worm or double reduction drive rear axle available in models 40 and 50. Bevel or double reduction axles available in 30. Worm axles in 60, 70 and 80. Three or more wheel bases in each model. All Larrabee models have hydraulic brakes; 40 up have vacuum booster.

MACK LINE

Other wheel bases furnished on all truck models.

On 6-wheel jobs, 4 rear wheels driven by chains, foot brake on 4 rear wheels.

Hyp.—Hypoid drive, single reduction.

MORELAND LINE

*Indicates six-wheel type vehicles.

PIERCE-ARROW LINE

*Model FA1 also available as Model FA2, at $2,550 on 160-inch wheel base, weight 4,150 lbs., and also as Model FA3, at $2,250 on 180-inch wheel base, weight 4,200 lbs.

*Model XA1 also available as Model XA2, at $3,550 on 162-inch wheel base, weight 6,800 lbs.

*Model XB1 is also available as Model XB2, at $3,800 on 180-inch wheel base, weight 6,900 lbs.

*Model HB1 is also available as Model HB2, at $4,550 on 130-inch wheel base, weight 8,500 lbs., and also as Model HB3, at $4,600 on 198-inch wheel base, weight 8,700 lbs.

*Model WC1 is also available as Model WC2, at $5,150 on 180-inch wheel base, weight 8,950 lbs., and also as Model WC3, at $5,250 on 198-inch wheel base weight 9,050 lbs.

*Model RD1 is also available as Model RD2, at $5,450 on 180-inch wheel base weight 9,650 lbs., and also as Model RD3, at $5,500 on 198-inch wheel base, weight 9,750 lbs.

*Model RF1 is also available as Model RF2, at $5,650 on 204-inch wheel base, weight 10,500 lbs.

‡Seven-speed transmission also available.

REPUBLIC LINE

*Model 75-4 also available as Model 75-6, priced $1,495, on 128-inch wheel base, with Lycoming 4SL engine, 6-cyl. 3¼ by 4½ inches, rated 25.3 h.p., weight 3,150 lbs.

*Model 76-4, also available as Model 76-6, priced $1,675, on 150-inch wheel base, with Lycoming 4SL engine, as in Model 75-6, weigh: 3,500 lbs.

†Model 60-61, also available with four-wheel brakes, $3,155.

**Model 62, same as 60-61, on 171-inch wheel base, $3,040.

†Model 25W-25WRB available with four-wheel brakes

**Model 66, same as 65, on 200-inch wheel base, $3,750.

**Model 25W, 25WB and 25WBR also available in 3½-ton capacities as Models S25W, S25WB and S25WRB on wheel bases of 165, 156 and 124 inches, priced $3,695.

**Models 35 and 35B also available in 5-ton capacities on wheel bases of 170 and 187 inches, priced $5,145.

**Model 85 also available as Model 86 on 170-inch wheel base, price $2,150.

**Model 50-51 also available as Model 52 on 170-inch wheel base.

REO LINE

*Tonner in wheel base, 123, 138; 1½-ton in wheel base, 137, 156, 152; 2-ton in wheel base, 152, 168; 3-ton in wheel base, 168, 179, 184.

RUGBY

F—Chassis weight includes body.

STEWART LINE

*Buddy 1-ton can be supplied in 138-inch wheel base.

*Models 16 and 16X can be supplied in 145-inch and 160-inch wheel base.

Model 26X can be supplied in 146, 160 and 176-inch wheel base.

Model 29X can be supplied in 160 and 176-inch wheel base.

*Model 26XW can be supplied in 148, 176 and 190 inch wheel base.

*Model 18X can be supplied in 148, 190 and 220 inch wheel base.

*Models 19X and 22X can be supplied in 148, 172, 190, 220 and 235 inch wheel base.

WHITE LINE

*Bus Model 52 is equipped with Booster Brakes and 50B and 54 with air brakes. Model 58 with air brakes as optional equipment.

Model 60 gross weight capacity, with 32x6 tires, 8,000 lbs; 34x7.50 balloon tires optional at extra cost.

‡Supplied in optional wheel bases.

FORD LINE

*Low speed axle 22.6 to 1.

Aviation Daily News

UNITED AIRCRAFT EARNS $7,249,837 IN 9 MONTHS

New York, Nov. 27.—For the quarter ended September 30, 1929, the net profit of the United Aircraft and Transportation Corporation and subsidiaries was $2,838,332 after charges and Federal taxes, equivalent after preferred dividend requirements to $1.48 a share on 1,792,427 no-par shares of common stock. This compares with $2,608,034, or $1.52 a share on 1,594,619 common shares in the preceding quarter and $1,803,471, or $1.04 a share on 1,557,308 common shares in the first quarter of this year.

The net profit for the nine months ended September 30, 1929, was $7,249,837 after above charges, equivalent after preferred dividend requirements to $3.74 a share on 1,792,427 shares of no-par common stock.

MAJOR MAYO COMPLETES U. S. AVIATION SURVEY

New York, Nov. 27.—Major R. H. Mayo, consulting engineer for the Imperial Airways and British representative of the Guggenheim Fund, returned to England last week after a month's visit to the United States, during which he made a survey of American aviation activities. Major Mayo, who is one of the foremost authorities on aeronautics in Great Britain, was particularly interested in the Guggenheim safety airplane contest and the development of the Armstrong seadrome project.

WRIGHT AERO NET PROFIT FOR 9 MONTHS $1,653,828

New York, Nov. 27.—The Wright Aeronautical Corporation reports for the quarter ended September 30, 1929, net profit of $299,331 after taxes, equivalent to 50 cents a share on 600,000 no-par shares of stock. This compares with $820,572, or $1.36 a share on 600,000 shares in the preceding quarter, and $899,253, or $3 a share on 300,000 shares, in the third quarter of 1928.

Net profit for the first nine months of 1929 totaled $1,653,828 after above charges, equal to $2.75 a share on 600,000 shares, comparing with $1,922,130, or $6.64 a share on 300,000 shares in the first nine months of the previous year.

COST OF PRIVATE PLANE OPERATION IS DETERMINED

Newark, N. J., Nov. 27.—Operating costs of the average private plane are only 50 per cent. greater than the figure for the average automobile, according to a survey just completed by the Garden State Motor Club, Newark. The average automobile operating cost is 6.43 cents per mile and a three-passenger plane powered with a ninety-horse power engine costs 9.39 cents a mile to fly. Insurance and hangar rent make the plane figure higher, but maintenance cost of a plane is less being only .75 cents per mile compared to 2.86 cents for automobiles.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

6,482 ACTIVE PLANE LICENSES AND 3,109 IDENTIFICATIONS IN U. S.

Washington, Nov. 27.—There are now in the United States 6,482 active airplane licenses and 3,109 airplane identifications issued by the aeronautical branch of the Department of Commerce, it was announced today by Gilbert G. Budwig, director of licensing and inspection.

Active pilots' licenses now number 9,279; students' permits issued, 28,738; active mechanics' licenses, 7,196.

Approved type certificates issued for aircraft now total 271, the director stated. Approved type certificates issued for engines now number thirty-two, and 134 of these certificates have been issued for propellers. Flying schools which have been approved number twenty-two; flying instructors approved, eighty-eight, and ground instructors approved, 129.

On June 30, 1927, only nine approved type certificates had been issued for airplanes. One year later, thirty-eight additional type engines had been approved. On June 30, 1928, licenses had been issued for approximately 3,000 pilots, 3,000 mechanics, and 2,000 airplanes.

On June 30, 1928, 5,137 pilots' licenses had been issued, 4,687 renewed, 15,868 student permits issued, 4,379 aircraft licenses issued, 727 aircraft licenses renewed, 3,256 identification marks assigned, 3,264 mechanics' licenses issued, and seventy-five mechanics' licenses renewed.

During the past fiscal year, 121 approved type certificates were granted for airplanes, twenty-one for engines, and twenty-eight for propellers. In addition, sixty-five different types of airplanes were examined and approved without being granted approved type certificates, and thirteen types of engines were approved on the same independent basis. The total number of approvals granted to airplanes, engines, and propellers during the year, therefore, amounted to 248.

N. J. NATIONAL GUARD UNIT HAS FULL QUOTA

Trenton, N. J., Nov. 27.—Seventy-five men, the required number for Federal recognition of the unit, have been enlisted by the Forty-fourth Division Aviation, New Jersey National Guard, in the last month. The unit will be recruited to its full strength of ninety-eight after recognition is accorded. Fourteen officers have been commissioned and the unit is waiting on completion of its hangar at Newark Airport before applying for recognition.

Cumulative New Passenger Car Registration Table, October, 1929

Some of this data has been published previously, but it is given here complete for the convenience of our subscribers.

States	Auburn	Black Hawk	Buick	Cadillac	Chevrolet	Chrysler	Cord	DeSoto	Dodge	Durant	Elcar	Erskine	Essex	Ford	Franklin	Gardner	Graham-Paige	Hudson	Hupmobile	Jordan	La Salle	Lincoln
Arkansas	4		97	6	1599	86		62	119	30		5	62	2694	4	1	25	17	33		12	5
Conn'ticut	32		323	72	617	152	2	133	154	18	3	12	213	800	41	2	71	80	127	1	58	8
Delaware	3		50	8	112	4	2	2	3	14			14	215	1		1	4	7		11	3
Florida	4		109	8	601	55	4	27	50	4		1	65	1180	3		39	26	28		15	4
Idaho	1		49		373	18		27	41	57		3	28	550	1		19	12	6		2	
Illinois	77	12	896	120	2424	403	46	247	385	105	18	13	521	4904	38	11	238	298	340	6	212	53
Kansas	6		212	7	1380	51		59	114	30		4	154	2036			28	53	44		5	
Louisiana	18	1	137	7	1407	75		84	96	5		2	71	2344	5	2	32	31	64		9	5
Maryland	15	2	216	15	808	94	2	47	65	31		1	135	1121	10		60	52	106	6	22	14
Michigan	17		812	135	2450	209	15	157	188	135	1	10	508	4429	6	3	178	249	249	3	131	19
Minn.	17		256	18	1335	124	9	53	101	96		7	177	2267	5	3	95	52	109		36	10
Missouri	20	6	298	23	1445	91	6	61	145	73		3	267	2321	17	14	88	70	92	1	44	12
Montana	3		39	3	215	22	2	13	38	21		4	30	324	7		21	10	10		2	
N. Hamp.	8		65	5	214	42		29	29	32		3	50	261	10		16	15	14	1	6	
N. Jersey	75	4	848	110	1505	323	18	164	208	60		13	389	2112	62	7	184	157	234	4	126	21
N. Mexico	3		82	1	377	24		23	29	20		2	21	441	1		6	8	3		5	4
N. Ca'lina			169	9	1283	110	1	58	121	28		1	116	2246	6		29	59	18		9	5
N. Dakota			45		460	28		19	31	38		3	24	861	2		19	9	10		2	
Ohio	57	12	789	74	3254	297	24	299	275	168	1	11	730	5105	54	10	219	217	322	10	114	41
Oregon	9		135	4	668	72		40	69	118		4	95	1072	9	4	42	42	40		6	1
Pennsy	108	4	1391	124	2739	697	25	343	410	205	5	10	796	5252	104	7	379	300	437	15	198	42
Rh. Island	12	2	129	16	176	72	7	63	51	21		1	59	289	10		34	15	20		22	1
S. Dakota	7		66	1	603	33		17	58	49		5	44	816			16	11	23		1	
Utah	5		42	5	266	17		20	39	26		1	45	391	5		30	11	20		5	2
Virginia	3		168	7	1061	91		60	111	30		1	123	1710	3		44	36	76		19	7
Wash'gton	17	1	180	10	634	109	4	96	90	129		4	135	1402	11		54	51	89	1	13	7
W. Va.	13	2	97	12	633	72	1	44	75	20		2	112	836	1		55	25	35	1	18	7
Wisconsin	13	2	395	21	1343	128	2	80	143	67	2	9	286	1942	21	4	99	104	62	1	26	10
Dis. of C.	8		112	13	294	43	1	18	33	16		1	83	509	4		41	32	33	2	18	2
Total..	555	48	8207	834	30481	3542	171	2345	3271	1646	30	136	5353	50450	441	63	2162	2046	2641	52	1147	283

States	Locomobile	Marmon	Marquette	Nash	Oakland	Oldsmobile	Packard	Peerless	Pierce-Arrow	Plymouth	Pontiac	Reo	Roosevelt	Stearns-Knight	Studebaker	Stutz	Viking	Whippet	Willys-Knight	Windsor	Miscellaneous	Totals
Arkansas		2	15	38	15	21	5		2	164	117	4	10		15		3	91	11		6	5,370
Conn'ticut		22	30	128	58	77	106	7	18	97	165	46	34	2	104	6	9	78	42		11	3,959
Delaware		1	4	17	11	10	13	1	3	11	25				10		1	11	2		1	575
Florida		1	18	30	11	21	27	1	2	38	62	11	4	2	14		1	36				2,502
Idaho		1	4	27	9	15	2			39	37	2	8		19		2	35	9		1	1,397
Illinois	1	34	83	345	197	369	293	27	53	394	501	87	46	2	327	17	29	238	93	9	60	14 622
Kansas		9	31	84	28	76	7	4	1	98	194	15	3		57	2	3	181	36			5,012
Louisiana		2	8	126	17	53	25	2	5	122	180	9	10		57	2	5	54	14		2	5,038
Maryland		12	16	94	24	61	45	7	12	56	111	8	8	1	76	6	2	45	17			3 423
Michigan		34	78	195	138	271	213	9	10	212	273	81	27		153	4	29	205	32	12	13	11,893
Minn.		7	29	112	51	96	59	5	14	204	194	21	7		126	8	3	205	41	7	6	5965
Missouri		13	26	126	53	130	86	11	29	156	203	16	20	1	83	4	4	212	36	13	7	6,331
Montana		3	3	23	11	12	3			52	31	4	4		17		2	53	9		1	997
N. Hamp.		7	10	46	8	34	13	3		19	43	20	11	2	25	2	2	27	16			1,088
N. Jersey		24	40	358	105	252	281	37	72	158	201	51	30	6	290	8	26	147	157	5	11	8,973
N. Mexico		4	17	16	6	14	7		1	37	21	3	3		17		1	32	7			1,236
N. Ca'lina		6	24	66	26	50	21		2	108	156	3	9		30		1	81	7			4,858
N. Dakota		7	3	39	15	33	6			77	60	1	6		23		2	72	10			1,925
Ohio		47	91	370	164	422	264	124	31	325	499	51	69	2	301	20	29	464	175	2	9	15,542
Oregon	1	3	19	55	20	57	13		4	75	83	19	11		69		4	51	32			2,946
Pennsy	1	62	126	538	211	424	426	73	85	592	610	79	80	9	393	23	32	452	211	12	23	18,253
Rh. Island		3	10	59	12	26	31	6	14	43	64	20			33	1	1	27	20		1	1,371
S. Dakota		1	6	27	9	77	4			107	56	6	2		32		3	104	8			2,192
Utah		3	2	34	14	12	15		2	20	29	2	2		15	3	4	17	6			1.110
Virginia		4	23	59	27	50	37	4	6	112	127	3	15		54	2		99	12		3	4,187
Wash'gton		12	22	75	26	79	33	6	5	162	96	10	9		102	2	9	56	44			3,785
W Va.		6	25	61	29	53	19		4	73	79	9	14		44	3	3	86	19		4	2,597
Wisconsin		11	31	248	81	128	55	12	24	163	265	8	10	1	153	3	4	209	37	1	19	6,228
Dis. of C.		10	7	74	14	47	32	22	5	32	36	19	4		45		6	18	12		8	1,65+
Total...	3	351	801	3475	1390	2975	2141	361	404	3746	4608	503	456	23	2689	116	220	3436	1115	61	186	145,079

Figures in this table are from R. L. Polk & Co. of Detroit, with the excetion of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Readers desiring county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies.

CLARK

CLARK AXLES *and* METAL WHEELS *for commercial vehicles*

CLARK EQUIPMENT COMPANY
Buchanan Michigan

AXLES
Front & Rear
WHEELS
Single or Dual Tire
CAST STEEL HOUSINGS
TRANSMISSIONS

DISTRIBUTION
SHOP EQUIPMENT
REPLACEMENTS

WHOLESALE

MERCHANDISING
ACCESSORIES
EQUIPMENT

UNIT PARTS CORP. SPEEDS TURNOVER

Rigid Inventory Control Eliminates Obsolescence

A. F. BAXTER, president of the Unit Parts Corporation, Buffalo, N. Y., is almost entirely personally responsible for the increase of stock and service facilities now available to his trade in western New York and northwestern Pennsylvania.

He is a true type of executive; the kind of man who is always alert to any new ideas that might increase business possibilities. Through his own initiative, 15,000 items are now carried in stock instead of the 3,000 handled only six years ago.

He realized that obsolescence is one of the most serious problems of the replacement parts wholesaler and that few other businesses have such tragic possibilities in this direction.

Too many parts houses have hit the wall through having assets frozen in stock that could only be sold for junk. The free acceptance of returns of obsolete material by manufacturers does not solve the problem, for obviously the cost of handling and of crediting these returns must be made up somewhere. Effective methods of combating the cost of obsolescence must be based on sounder principles.

The "sounder principles" of the Unit Parts Corporation are fundamentally carried out by what is known as an "automatic buying" plan, which controls inventory, assists in the placing of regular orders and enables the filling of daily material requests without confusion or unreasonable back-door necessities.

There are two types of orders which must be filled. One is received through the mails and the other is the over-the-counter transaction.

Although there are 15,000 items carried in stock, clerks have been so thoroughly trained that they can find just about any one of these items. As the customer names the articles he wants, the clerk goes immediately to the shelves and obtains them. If an obsolete or seldom-called-for item is on the list, there is available one of the most complete catalogues that can be found in any wholesaler's office. This lists every automotive part that has been sold since the days of the one-cylinder automobile.

When all the items have been assembled to make up the order a form is filled in in triplicate, one copy for the customer, one for the stock record and one for the accounting department.

Should there appear a need for placing an order for certain items, another form, a back-order form, is filled out at the same time, or as near the same time as possible without detaining the customer. If the customer cannot be served because of this, he receives a copy of the back-order form. A unique thing about this procedure is that, even though the goods may come in within a few hours, if they are not on the shelf at the moment they are called a back-order.

Orders received through the mail are immediately turned over to stock clerks, who fill them, marking, if necessary, those items which must be placed on back-order.

Behind and controlling this order-buying" plan.
filling procedure is the "automatic

In the average accessory store possibly 90 per cent. of the items of stock are staples that must have a rapid turnover to show a profit. It is evident that at the end of each month inventories must be very nearly at zero, the turnover being very great, no matter what the sales volume might be.

The merchant who classifies his staple stocks into perhaps twenty different classifications and maintains accurate account, in dollars, of the movement and status of each classification often believes that he has the problem licked and his stock controlled.

But he may be obtaining his turnover on 60 per cent. of his items, while the other 40 per cent. may be dead stock—he has no way of knowing if this 40 per cent. is included in the merchandise classification set up in dollars. That is, 40 per cent of each classification might be dead stock.

A rapid turnover means frequent reordering and increased buying cost because each order and invoice passing through the books carries its own expense. An average minimum period of one, or two weeks should be set, even though an item could be obtained locally in a matter of hours.

The maximum turnover obtainable depends upon the necessary time to secure reorders if reorders are not placed until m'n mum stock is reached. Thus, if it takes a month to secure reorder merchandise, apparently the minimum must be a month's supply to increase such a turnover, however, al ione needs to do is to have two orders on the way, half a month apart. Then set two minimums, one a fifteen day supply, the other a month's supply.

One of the most important factors in business is the cash discount. When a manufacturer talks discounts and dating terms the customer is lured into believing that to a large degree he must look here for his profits, so he puts in a stock of favorable terms and discounts and is pleased with his arrangement. Very few realize that a turnover of six without a discount is more favorable than a turnover of three with a discount of 10 per cent. A merchant should obtain the most favorable terms and largest discounts he can, but only if he won't have to sacrifice stock turnover to do so.

Some of the leading automotive manufacturers are encouraging their dealers to maintain a stock plan; buy in small quantities, just often enough, and thus secure the major benefit of turnover.

Tests in a number of accessory stores have shown that less than 50 per cent. of the items called for are available on the day they are wanted. That means that the obsolete items are waiting on the shelf but the fast movers are out of stock. This condition is responsible for the loss of more sales than many jobbers realize, for when customers start to shop around they very often come to rest somewhere else.

The buying plan of the Unit Parts Corporation will now be more clearly understood, for it is aimed at the difficulties just presented.

Each item carried by the house is given a card, indexed by part number, item and price. These cards are filed alphabetically and numerically under the name of the manufacturers.

Maximums and minimums are established according to the period in which reorders should take place. Balance on hand figures are carried out as each item is sold.

Suppose 100 units is the maximum number ever held in stock and forty is the minimum. When the little red tab, which indicates the number on hand by sliding down a scale on each card, reaches forty, that item is reordered in a 100 lot. By the time that order is filled nearly all of the forty in stock will have been sold.

The Unit Parts Corporation makes a practice of placing weekly orders with manufacturers. Stock clerk goes through the cards once every week and places orders for the items listed on those cards which show the need for reorder.

A comparison of order dates with the times those materials were received shows the service given by various manufacturers. When rush orders are necessary the stock clerks can pick out the manufacturers or distributors most likely to give the fastest service—and this is done, regardless of the profit margin on that particular item when compared with the slower source of supply.

This system works out so perfectly for the Unit Parts Corporation that it is necessary to take only one physical inventory each year.

Here Is Jobber Layout Neat and Compact

UNIT PARTS CORPORATION, Buffalo, N. Y., stocks 30,000 items quickly available to the trade

JOBBER PUTS HIS OWN TIRE CHAIN ON MARKET

Brooklyn, N. Y., Nov. 27.—The G. J. Seedman Company, Inc., 765 Atlantic Ave., has just placed on the market its own trade-marked tire chain as a companion to the Seedman battery, and reports a large business in chains already.

This company, one of the largest general automotive jobbers in the country, is one of the first of the automotive jobbers to market and really practice intensive selling of its own products over a fairly large territory.

In this case the company, which already has a branch in New York city, has established warehouses for chains in order to give its customers almost instant service. These warehouses are five in number and are equipped to service a territory within a hundred mile radius of the main store in Brooklyn. They are located in Manhattan, Westchester, Bronx Staten Island and Long Island.

The Seedman chain is equipped with adjusters which make it necessary for the firm's customers to stock only seven sizes to service all makes of cars. As a further inducement to the trade, and in order to establish rapid consumer acceptance, the firm has inaugurated a return privilege whereby the retailer may return and get full credit for all chains not sold by the first of April, 1930.

Foreign Trade Opportunities

Washington, D. C., Nov. 27.—Foreign automotive trade opportunities just announced by the automotive division of the Bureau of Foreign and Domestic Commerce of the Department of Commerce are listed below.

Additional information may be obtained from the bureau and its district and co-operative offices by duly registered firms or individuals upon written request, giving the opportunity number.

41991—Buenos Aires, Argentina; agency for automobile garage and service station equipment.

41996—Sydney, Australia; agency for automobile hydraulic jacks.

42100—Bremen, Germany; agency for automobile replacement parts.

41987—Duisburg, Germany; purchase or agency for automobile spare parts, best grade.

42093—Zagreb, Jugoslavia; agency for automobile tools.

42175—Budapest, Hungary; purchase and agency for automobile and motorcycle accessories and parts, especially specialties and novelties.

41989—Regensburg, Germany; purchase of automobiles, small.

42171—Athens, Greece; agency for automobiles, two-passenger.

41994—Dresden, Germany; agency for automobiles, two to four-passenger, low priced.

42172—Zurich, Switzerland; purchase of hardware, automobile body builders, including door handles, hinges and window lifters.

41922—Buenos Aires, Argentina; purchase and agency for automobile service station equipment.

41824—Vienna, Austria; agency for automobile and motorcycle accessories.

41909—Nice, France; purchase of automobile spare parts, especially linings.

41794—Manchester, England; purchase or agency for automobile specialties.

JOBBER USES TAG TO SELL BATTERIES

Wilmington, Del., Nov. 27. —Any practical kink that will help the sale of used cars is welcomed by most automobile dealers. The Motorcar Service Company, Wilmington, Del., jobbers of accessories, replacement parts and shop equipment, makes use of a practical plan along this line for its car dealer customers. It makes a point of selling to them the idea that new batteries in used cars, properly brought to the attention of their dealers' clientele, greatly increase the value of a second-hand automobile in the eyes of the prospect.

To this end the company provides with each new battery sold to the car dealer a substantially made, bright yellow tag, bearing on its face a clear cut of the Gould storage battery it handles and below this the announcement: "I certify that this car is equipped with a new standard Gould storage battery," followed by a space for the name of the car dealer and the date."

The fact that so many exchange cars merchandised by dealers have in them an old and often extremely disappointing battery affords a notably good talking point for the used car salesman when approaching the consumer. The tag, which has a stout brass eye at the top through which wire or cord is passed, is to be fastened to the used car offered for sale on the door handle or the tank cap or some other place where it will be sure to attract notice. The surprise to the ultimate customer in learning that the car is equipped with a new standard battery time and again has proved one of the clinching factors in the deal, and forward-looking dealers readily take advantage of this opportunity to enhance the value of their exchange cars, thereby providing the jobber with an additional outlet for the sale of batteries.

DEFIANCE PROMOTES KRON

Cleveland, Nov. 27.—J. W. Kron has been appointed manager of the Cleveland district by Defiance Spark Plug, Inc. Kron has been employed as a salesman for some time. His new offices are at 1374 East 17th St.

Editor's Column

A MAN who has had a great deal to do with building up run down manufacturing companies has this to say: "Never cut prices. If you can't sell your products at a price that will show a good profit, get a new sales force that will. If you can't get a sales force that will sell your product at a profit, there is something wrong with the product or the method of manufacture. Find out what is wrong and correct it. You can't make profits if you resort to price cutting, and if you can't make profits you can't remain in business."

Since this statement is made by a man who has been called upon by bankers, by creditors and by owners to save businesses that are on the verge of bankruptcy and who has invariably made them strong, profit-making concerns, his words are surely worth careful consideration.

This holds true in the case of manufacturers, wholesalers and retailers. Manufacturers, who give the most attention to maintaining the prices on their products all along the line, show the best rate of growth and the most satisfactory profits. Wholesalers, who never cut prices, create a prestige that can be created in no other way. Non-price-cutting retailers attract business that no price-cutting store can get.

Business must be done at a profit or not done at all. Cutting prices means cutting profits. Competition does not permit taking profits that are too short on a few items and making it up by long profits on others. The buyer is always looking for the best values. Where price cutting is rampant, the best class of customers makes it a practice to buy from concerns who never cut prices and which they believe they can trust. The less desirable customer buys each article at the lowest price offered.

LOWRY BRAKE SERVICE MOVES INTO NEW HOME

Newark, N. J., Nov. 27.—The Lowry Brake Service Company, for many years at Hoyt Street and Sussex Avenue, has moved to larger quarters at 22 Littleton St. The new location has more than 9,000 square feet. The additional space has allowed for many improvements, including every modern facility for brake lining and automobile repairing.

The concern was recently appointed distributor for the northern part of New Jersey for the Lorraine controllable automobile spotlight. William E. Dayton is the proprietor and for a number of years was service manager of the Mallon Motor Car Company and until recently was assistant service manager of the De Cozen Motor Car Company.

Plant Extension

Rochester, N. Y., Nov. 27.—The Universal Bearing Metals Corporation has been organized and incorporated here with a capital of 800 shares of no par value, to deal in metals of all kinds, especially material for utilization in the automotive trade. W. Miller, 786 Ellicott Square Building, Buffalo, heads the new concern, which plans to establish a plant and salesroom soon in this city.

Bridgeport, Conn., Nov. 27.—Repairs and additions to the Fairfield plant of the E. I. du Pont de Nemours Company planned this year will cost approximately $100,000, officials have revealed. A new warehouse and fireproofing work are projected. Waterproof automobile cloth is the principal product of the plant.

Beacon Falls, Conn., Nov. 27.—Homer D. Bronson Company has completed a large brick addition to its plant and will start operations in it within two weeks, as soon as machinery is installed. The addition will be used largely by the plating department. The concern manufactures automobile and piano hinges. Constant business expansion brought the need for the addition.